



## SAFETY BRIEF: RESPIRATORY PROTECTION

Respiratory protection in the workplace protects employees from hazardous gases and vapors, oxygen deficiency, and airborne particles such as crystalline silica, metal fumes, and chemical or coal dusts. Respirators enable employees to safely work around harmful dusts, fogs, smokes, gases, vapors, or sprays, and work in confined spaces where oxygen supply may be limited or toxic. An estimated 5 million workers in the United States are required to wear respirators on the job.

Many workers do not think twice when they pick up and use a respirator in their workplace. This “grab and go” mentality can have consequences. When employees are not provided with proper personal protective equipment (PPE) and specific procedures to ensure the respirator’s effectiveness, health hazards such as cancer, lung impairment, or even death can occur. On the other hand, if employers provide respirators without knowing the regulations and requirements, they run the risk of being out of compliance and can face serious fines from OSHA.

Take this case study, for example. Several years ago, two OSHA inspectors visited a facility to conduct an inspection after receiving an employee complaint from a recent forklift accident. During the inspection, an OSHA inspector noticed a dust mask on a work bench. The inspector asked the plant manager if the employees were required to wear dust masks. The plant manager stated that all employees were required to wear dust masks when doing a specific job. As a result, the company received more than \$10,000 in fines- none of which were in relation to the forklift accident complaint. The fines were a direct result because the company did not follow the respirator regulations: there was no written respiratory protection program, no records of fit tests or medical clearance, and no training records.

### **Written Respiratory Protection Program**

Employers are required to establish and maintain a written respiratory protection program whenever the employer or OSHA requires your employees to wear respirators. For example, as an employer, you may need to establish a respiratory protection program:

- If your employees work in situations where the level of oxygen is insufficient or potentially insufficient.
- If your employees are potentially exposed to harmful levels of hazardous gases or vapors.
- If your employees are exposed to other potential respiratory hazards, such as dust, airborne biological hazards, mists, fumes, sprays, and other airborne particles.

When an employer provides their workers with respirators, they must also have a site-specific written respiratory protection program to include the following:

- A respirator selection process
- Employee training records
- Employee medical evaluation reports
- Fit test results
- Filter change schedules
- Evaluations of hazardous atmospheres
- Program evaluations

The employer must keep these records on file and available for employees, representatives, and inspectors to review upon request.

Employers are also required to supply their employees with respirators when all preferred methods of protecting them from breathing contaminated air have been determined to be insufficient to reduce the contamination to nonhazardous levels. These preferred methods include engineering and administrative controls. When engineering controls are not feasible, or while engineering controls are being put in place, appropriate respirators must be used. You must also consider the potential for emergencies—that is, for reasonably foreseeable emergencies—when evaluating the respiratory hazards in the workplace.

**Engineering Controls:** Physically change the work environment to reduce employee exposure to air contaminants. Examples include:

- Change of the work process
- Isolation or enclosure of the work process of employees
- Local exhaust or general dilution ventilation
- Substitution of less hazardous substances for harmful materials

**Administrative Controls:** Involve changes in the length of time or the time of day in which an employee can be exposed. Examples include:

- Employee rotation
- Rescheduling work in area to times when air contaminant levels are low

Employers **must** provide respirators when such equipment is necessary to protect the health of employees. The respirator must be suitable for its intended purposes. When you are required to provide respirators, you **must** also establish and maintain a respiratory protection program.

### Types of Respirators

There are two major classes of respirators: Air-purifying respirators (APRs) and Supplied-air respirators (SARs).

Air-purified respirators remove contaminants from the air. Examples of these include N95 disposable, half-mask, dual cartridge, and powered air purifying respirators.

Supplied-air respirators provide clean, breathable air from an uncontaminated air supply, generally a compressed air tank or through an airline. For instance, a self-contained breathing apparatus (SCBA).



## **Training, Medical Clearance and Fit Testing**

OSHA requires all employees to be fully trained on respiratory protection *prior* to using their respirator. The most respiratory-related safety citation issued by OSHA is the failure to provide a medical examination before requiring an employee to work with a respirator.

Employees who are required to wear respirators at work are also required to complete a medical evaluation and clearance to ensure that the respirator functions properly and is not adding any additional stress on the body. Respirators can make breathing difficult or even induce feelings of claustrophobia and anxiety—not everyone can wear a respirator. Respiratory impairment such as anemia, diabetes, punctured eardrums, epilepsy, vision impairments, and cardiovascular impairments can all prevent a worker from using a respirator.

The medical clearance is a confidential questionnaire conducted by a physician or other professional licensed health care professional (PLHCP) to ensure there aren't any underlying health conditions that wearing a respirator would exacerbate. The employer is responsible to pay for the medical clearance.

Even employees who wear N-95 respirators are required to be medically cleared!

After employees have passed their medical evaluations and are cleared, they must also be trained on the specific hazards that their respirator protects them against, as well as how to properly clean, maintain, and dispose of their respirator. All employees must be given a “fit test” to ensure their respirator is the correct size and makes an adequate seal against their face. Employees must also be trained on how to properly wear their respirator, including how to put it on, take it off, and check the fit and seal. Employees must be retrained once per year, or if any new equipment, chemical, or job process is introduced.

## **Dust Mask vs. N-95 Respirator**

Dust masks are not NIOSH\* approved disposable filtering facepieces. These masks can be worn to protect employees against non-toxic nuisance dusts during work activities such as mowing, gardening, sweeping and dusting. These masks are not designed to protect against hazardous dusts, gases or vapors. Dust masks can be mistaken as N-95 respirators. To tell the difference, look for a NIOSH label printed on the box and/or on the mask.

N-95 respirators are NIOSH approved and have the label printed on the mask, as well as two straps for a tight seal on the face. Employees who use these masks must meet the requirements to wear the mask: medical evaluation and clearance, initial and annual fit testing, and training.

*\*NIOSH- National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will also inform the user what the respirator is intended and designed for, and how much protection it will provide.*





## **Voluntary Use of Respirators**

Employers who allow their employees to wear respirators on a voluntary basis when not required by OSHA or the employer, must implement limited provisions of a respiratory protection program. When a filtering facepiece respirator is all that is used, the employee must be provided with a copy of Appendix D (see attachment). For all other voluntary users, an additional written respiratory program that covers medical fitness and proper maintenance procedures must be implemented, signed and dated by the employee and employer, and kept on file as documentation.

Voluntary use means:

- An exposure assessment has been conducted;
- The permissible exposure limit (PEL) is not exceeded;
- No OSHA regulation requires that respirators be provided by the employer;
- The employer does not believe it is necessary to reduce exposures below their current levels (i.e., there is no perceived hazard);
- The employer does not require, recommend, encourage or suggest that respirators be used;
- Workers ask to wear respirators; and
- Respirators will not be used for emergency response or escape.

## **FAQ's**

### **Q: Can employees with beards or facial hair use respirators?**

**A:** OSHA clearly states that nothing (including facial hair) is to come between the sealing surface of a tight-fitting respirator and the face when respirator use is required. Beards may be worn with loose fitting respirators (e.g., such as hoods or helmets) that do not require a face-to-facepiece seal.

OSHA has also stated that voluntary respirator users may have beards (but it is discouraged), again because voluntary use presumes there is no atmospheric exposure hazard to protect against. Employers should recognize that allowing use in these circumstances may undermine other program elements.

### **Q: If an employer allows voluntary use of respirators, is the employer required to fit test the employees?**

**A:** No, the voluntary use of respirators in work atmospheres which are not hazardous does not require the respirator wearer to be fit tested. Additionally, the employer needs a signed Voluntary Respirator Use Form on file for every employee voluntarily using an N95 respirator, whether the respirator is provided by the employer or the employee.

Additional training is available through the AMLJIA Online University at [www.amljia.org](http://www.amljia.org). Log on to the Online University to access the "Respiratory Protection" hour-long training course. For more information about the Online University, contact the AMLJIA at 800-337-3682.