

Section 6

Personal Protective Equipment

The Florida Workers' Compensation law states as follows in paragraph 440.09(5): "If injury is caused by the knowing refusal of the employee to use a safety appliance or observe a safety rule required by statute or lawfully promulgated by the division, and brought prior to the accident to his or her knowledge, or where the injury is caused by the knowing refusal of the employee to use a safety appliance provided by the employer, the compensation as provided in this chapter shall be reduced 25 percent."

Personal Protective Equipment (PPE) is issued to safeguard employees from hazards. PPE is provided under three scenarios: when the hazard is known and engineering and administrative means of control have been exhausted the PPE is used to safeguard the employee when the exposure to the hazard is above the action level set by a safety professional; when the hazard is known but the level of exposure has not been determined and engineering and administrative controls are being evaluated/investigated; when the hazard is uncertain, then only trained and fully protected individuals will enter an area to determine and evaluate protection and cleanup methodology (this last scenario is limited to response personnel at uncontrolled hazardous waste cleanups).

Hazard
Assessment

It is the responsibility of the department to perform a hazard analysis to determine the proper safety equipment and Personal Protective Equipment for a particular job.

Assessing the
Need

It is the responsibility of the supervisor to ensure that required Personal Protective Equipment is provided at the time of the risk and those employees are trained in the proper use and function.

Assessing
the need
handouts

It is the responsibility of each employee to correctly use Personal Protective Equipment.

Eye Safety

Safety glasses, goggles or face shields are required whenever there is danger of exposing the eyes to flying particles, caustic substances or harmful light rays. All eye protection must meet ANSI Z87.1 regulations.

In areas that are designated for eye protection, everyone must wear eye protection, including employees performing the job, those working nearby, and visitors.

Safety glasses, goggles or face shields must meet the following requirements:

- (a) Provide adequate protection against particular hazards for which they are designed.
- (b) Is reasonably comfortable when worn under the designated conditions.
- (c) Fit snugly without interfering with the movements of the wearer.
- (d) Be durable.
- (e) Be capable of being disinfected.
- (f) Be easily cleanable.
- (g) Be kept in good repair.

Eye & Face Protection

Safety goggles/glasses worn over regular glasses must be comfortable and not disturb the adjustment of corrective lenses. All employees should check their safety glasses before each wearing.

The brow protector should fit against the face. This helps protect against particles entering the eye from above the glasses.

The glasses should fit snugly, not tightly, without eyelashes hitting the lenses.

If there is a headband, it should fit snugly. Headbands that are slack should be replaced.

Lenses should be clean and free of scratches, cracks or pitting.

Glasses used by different employees should be disinfected before being used by another employee.

Contact lenses are not a substitute for safety glasses. Contact lenses also pose a special threat to the user. Hazardous dusts, gases, vapor, or liquids can cause excess watering and inflammation of the eye, which may dislodge the lenses during operations in hazardous atmospheres.

PPE Fact Sheets

Contact lenses

- (a) Must not be worn in hazardous atmospheric conditions.
- (b) Must not be worn under respirators.

According to OSHA 1910.151, where a person's eyes or body may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Welding Eye Safety

Workers or other persons adjacent to the welding areas must be protected from the rays by noncombustible or flameproof screens or shields or they must wear appropriate welding safety goggles.

- (a) Helmets or head shields must be used during all welding or cutting operations.
- (b) Helpers or attendants must be provided with the proper eye protection.
- (c) All filter lenses and plates must meet ANSI Z87.1 standards for transmission of radiant energy.

Head Protection

Head protection equipment (hard hats) shall be worn where there is a possible danger of head injuries from electrical shock, overhead impact or falling objects. Hardhats must meet ANSI Z89.1 standards. Hard hats are broken down into three (3) classes, each class will protect the user accordingly. Hard hats must be worn in designated hardhat areas.

The shell and the suspension of the hardhat should be checked daily to see if they are in good condition.

Do not carry anything in your hardhat, or use it as a bucket or step stool.

Do not paint the shell. Solvents in the paint may soften the shell material.

Hand Safety

Appropriate hand protection shall be required where employees are exposed to injurious chemicals or abrasive materials or any other hazard that has the potential for hand injuries. Gloves of an appropriate type shall be worn when handling rough, sharp, and/or hot materials.

Hand Safety

Types of Gloves

- (a) Rubber, vinyl, or neoprene gloves are for use with caustic chemicals such as acids, cleansers, and petroleum products.
- (b) Leather gloves protect against sparks, rough surfaces, and scraping objects.
- (c) Metal mesh gloves protect hands from knives, blades, or other sharp instruments.
- (d) Plastic-film gloves protect against contact and injury from mild substances.
- (e) Cloth gloves provide traction for holding slippery objects, insulate against moderate heat or cold, and protect hands from some sharp edges.
- (f) Aluminized fabric or other special materials protect hands against the intense heat of molten material.
- (g) Insulated gloves are often made of rubber and worn underneath leather gloves as protection against electrical shock and burns.

Other Hand Protection

- (a) Hand pads protect against rough materials when fine finger movement is not needed.
- (b) Barrier creams protect against corrosive or other irritating substances, but are not substitutes for gloves.

- (c) Forearm cuffs made of cloth or special fabrics protect against heat and keep sleeves out of the way.
- (d) Wash hands frequently.
- (e) Keep hands away from face when working with chemicals.
- (f) Don't use hands for feeding materials into saws and other machinery.
- (g) Don't use hands to sweep up metal or wood chips.
- (h) Rotate tasks to give hands a rest, when possible.

Foot Protection

Safety shoes or metal foot protectors must be worn when a significant risk of foot injury exists. Each department shall determine which operations require foot protection. Safety shoes must meet ANSI Z41.1991 standards.

Wear shoes that fit properly.

Steel-toed shoes or metal foot protectors are required where employees work with heavy objects or machinery that could cause foot injury and when mowing.

Safety shoes with sole protection may be required for certain operations.

Inspect shoes regularly for damage such as: dampness or embedded metal that might impair electrical protection, cuts, cracks, etc., which might expose feet to danger.

Never wear defective footwear on the job.

Employees should not repair their own safety shoes, i.e., never repair non-sparking footwear with metal nails.

Clothing

Employees will wear appropriate clothing, jewelry, etc., for the type of work they are performing. Each department will determine acceptable attire.

Be sure the clothing is not contaminated from the last use.

Contaminated clothing should be decontaminated or discarded as soon as feasible. Never wear home clothing contaminated with biological or chemical waste.

When operating machinery or working with machinery, make sure all clothing fits correctly. Loose fitting clothing can contribute to accidents.

Beware of heat stress. Wear lightweight clothing when possible. Clothing that keeps water and vapors out usually also keeps heat in. Avoid dehydration by drinking adequate amounts of water, taking scheduled breaks, etc.

Employees with long hair shall wear a cap or net when working around machines or other potential dangers for which long hair could pose a risk.

Loose fitting clothing will not be worn when burning, cutting, welding, and brazing.

Respirators

OSHA 29 CFR Part 1910.134 Respiratory Protection Standard requires employers to establish and maintain a respiratory protection program whenever respirators are necessary to protect the health of employees.

Respirators shall be worn when working with chemicals or products that pose health hazards when inhaled or ingested in the form of dusts, vapors or mists. Each affected department shall have a written respiratory protection program and assign a Respirator Administrator. Requirements for a minimal acceptable program are specified in OSHA 1910.134. Contact Risk Management if you need assistance.

Standard operating procedures must be written and developed for respirator use. These should include all information and guidance necessary for their proper selection, use and care. Possible emergency use and routine use for the respirator should be anticipated and planned for. The correct respirator must be specified for each job operation.

If the respirator has an air cylinder, it shall be charged according to the manufacturer's instructions.

Respiratory protective devices fall into three classes:

- (a) Air-purifying
- (b) Supplied air
- (c) Self-contained breathing devices.

Proper Selection

- (a) Respirators must be selected on the basis of hazards to which the worker is exposed.
- (b) A qualified individual supervising the respiratory protection program (the Respirator Administrator) usually specifies the type of respirator in the work procedures. This individual must have the appropriate training and/or experience to administer or oversee the respiratory protection program.
- (c) The individual issuing respirators shall be adequately qualified to ensure the correct respirator is issued.
- (d) Respirators must meet the guidelines of ANSI Z88.2-1992.

- (e) OSHA recognizes respirators if the National Institute of Safety & Health (NIOSH) has approved them.

Medical Program

Employees shall not be assigned tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The employee may be required to have a physical at a County designated facility to determine if the employee is able to wear a respirator. A follow-up medical examination may also be required depending on the answers to the medical questionnaire and any change in the status of the employee or in operational conditions.

Training and Fitting

- (a) The user must be instructed and trained in the selection, its limitations, and the use and maintenance of the respirator.
- (b) Every respirator user must receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly.
 1. Respirators must have a good seal around the face to prevent contaminated air from getting in. Scars, facial deformities, missing dentures, beards, mustaches, long sideburns, long hair and environmental conditions can interfere with a good seal.
 2. A respirator equipped with a face piece has the same issues and shall not be worn if facial hair comes between the sealing periphery of the face piece and the face or if the facial hair interferes with the valve function.
 3. The respirator administrator must assign the proper grooming standards.
- (c) The face piece fit (user seal check) must be checked by the wearer each time the respirator is put on.
- (d) When using eyeglasses, remember that corrective glasses with long temple bars may interfere with the seal; and wearing contact lenses in contaminated atmospheres is not allowed.
- (e) A quantitative or qualitative fit test must be performed prior to the initial use of the respirator, when using different types, sizes or models and every six months thereafter. Documentation is required of all fit tests.

Cleaning and Disinfecting

Respirators shall be cleaned, inspected and disinfected after each use and whenever needed.

Storage

- (a) Store in such a manner as to protect against dust, harmful chemicals, sunlight, excessive heat and moisture.
- (b) Emergency use respirators must be kept in a place where they are readily accessible.

Inspection and Maintenance:

- (a) Respirators shall be inspected before each use.
- (b) Worn or deteriorated parts must be replaced.
- (c) An audit of the effectiveness and use of respirators will be conducted every six months by the responsible department issuing the respirators.

Self Contained Breathing Apparatus

Respirators for emergency use such as SCBA must be thoroughly inspected after each use.

- (a) According to OSHA regulations, a full face piece pressure demand SCBA certified by NIOSH with a minimum service life of 30 minutes or a combination full face piece pressure demand supplied air respirator (SAR) with auxiliary self contained air supply may be used in an IDLH atmosphere. SCBA's must be inspected every thirty (30) days. Air cylinders shall be fully charged and will be recharged when pressure drops to 90% of the manufacturers recommended pressure level. A signed and dated inspection form must be kept by the SCBA to show the inspection record.
- (b) Check for holes, cracks or any sign that the respirator may not be providing the best protection.

Check List 1

Check List 2

Breathing Air

Breathing air quality such as compressed air will meet at least the requirements for Grade D breathing air (ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989). Oxygen content must be between 19.5% to 23.5%, hydrocarbon (condensed) content of 5 milligrams/cubic meter of air or less, CO content of 10 ppm or less, Carbon dioxide content of 1,000 ppm or less and lack of noticeable odor. Cylinders purchased/leased will have a certificate of analysis for Grade D breathing air. Compressors used to supply breathing air will be situated so as to prevent contaminated air into the air supply system, minimize moisture content, have suitable in-line air-purifying filters and sorbent beds to ensure breathing air quality. Documentation will be maintained at the compressor of the changing out of filters and sorbents. Non oil-lubricated compressors will not exceed 10 ppm of CO. Oil-lubricated compressors will use a carbon monoxide alarm or high-temperature alarm or both, at no time will CO exceed 10 ppm. ALL BREATHING AIR COUPLINGS WILL BE INCOMPATIBLE WITH NONRESPIRABLE WORKSITE AIR OR OTHER GAS SYSTEMS.

Check List 3

Voluntary Use of Respirators

In some situations where a respirator is not required because the exposure of a substance is well below the established permissible exposure limit (PEL) and no other hazards are present, an employee may want to use a respirator voluntarily. That employee shall be determined to be medically able to use the respirator, and the respirator must be cleaned, stored and maintained so that it does not pose a health hazard to the user. If filtering face-pieces (dust masks not HEPA filters) are used voluntarily by employees, those employees are not required to be included in the respiratory protection program. The use of the respirator can be permitted if the Respirator Administrator has determined that the use in itself will not create a hazard.

The following statement must be given to the employee:

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

- (a) Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.*
- (b) Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the 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 tell you what the respirator is designed for and how much it will protect you.*
- (c) Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.*
- (d) Keep track of your respirator so that you do not mistakenly use someone else's respirator. The employee will acknowledge (signed form) receipt of this statement and acknowledge his/her understanding.*

Hearing Protection

Hearing can be damaged temporarily or permanently by noise. Noise frequency is the pitch (high or low) of a sound—the number of complete sound wave cycles each second. Intensity is the loudness of a sound, measured in decibels.

Departments with employees who are occupationally exposed to hazardous noise levels at or above an action level of 85 decibel time weighted average (TWA), shall have a written Hearing Conservation Program that meets minimum OSHA requirements for noise measurement and training. Medical evaluation begins with audiometric testing to check hearing and to set a baseline level against which required annual testing can be compared and thereafter to determine whether there has been a shift in either ear's ability to hear.

Areas or operations above 90 decibels will require mandatory use and areas or operations above 105 decibels will require double hearing protection.

There are three basic types of hearing protection:

- (a) Earplugs
- (b) Canal Caps—Made of a soft, rubber-like substance
- (c) Earmuffs

Hearing protection shall be worn in designated areas; and signs shall be posted to delineate the areas where hearing protection must be worn.

Any type of approved hearing protection should have a Noise Reduction Rating (NRR) expressed in decibels. This indicates the amount of noise reduction that the device provides. (Rough estimate is to subtract 7 from the NRR or for real life field application divide the NRR value by 2.)

Follow manufacturer's instructions for use, cleaning and storage of hearing protection.

Cotton balls shall not be used for hearing protection.

Two types of earplugs and one type of earmuffs should be available to the employee.

Vests, Lifelines and Safety Nets

In jobs involving potential fall hazards, buoyant work vests, lifelines, body harnesses, and/or lanyards must be used.

If there is a danger of falling into water while working, a Coast Guard approved life jacket or buoyant vest shall be used.

Always inspect lifelines and body harnesses/safety belts carefully before each use. Check for signs of deterioration such as torn fibers. Inspect lifeline attachments carefully.

If lifelines are used where they may be cut or damaged accidentally, such as by contact with sharp edges, they shall be padded or protected.

Body harnesses shall be used for fall arrest systems when appropriate.

Lanyards shall be at least 2-inch nylon or the equivalent and shall be short enough to allow a fall of less than six feet. They shall be firmly secured above the working surface.

Nets shall be used when a lifeline or a safety belt is not practical. Forged steel safety hooks, or shackles shall be used to fasten a net to its supports. The mesh shall be no larger than 6 inches by 6 inches. The nets shall extend beyond the edge of the work surface and shall be tested to ensure that they are tight enough to prevent an employee from making contact with any surface or structure.

Rope should have a strength of 5,400 pounds.

Electrical Protective Equipment

Electrical protective equipment shall be maintained, cleaned and in a safe reliable condition. In doing so, equipment should be air tested for defects, holes, punctures or cuts. Insulation should be checked for ozone cutting, embedded foreign objects, swelling, softening, hardening, stickiness or inelasticity. Electrical protective equipment shall be subject to periodic electrical tests.