PERSONAL PROTECTIVE EQUIPMENT

ATALIAN
GLOBAL SERVICES

After completing this module, you will be able to:

- Describe the hierarchy of controls as it relates to personal protective equipment.
- Identify types of personal protective equipment utilized in construction.
- Explain personal protective equipment training requirements.
- Explain the responsibilities of employers and employees regarding personal protective equipment.

During this module you will answer Quick Quizzes to help you review and test your understanding; these are not scored. There is also a short Final Quiz in addition to this module, which will be scored. It is necessary to pass the quiz with a score of 80% or better to receive credit for this module. This module takes 20 minutes to complete.

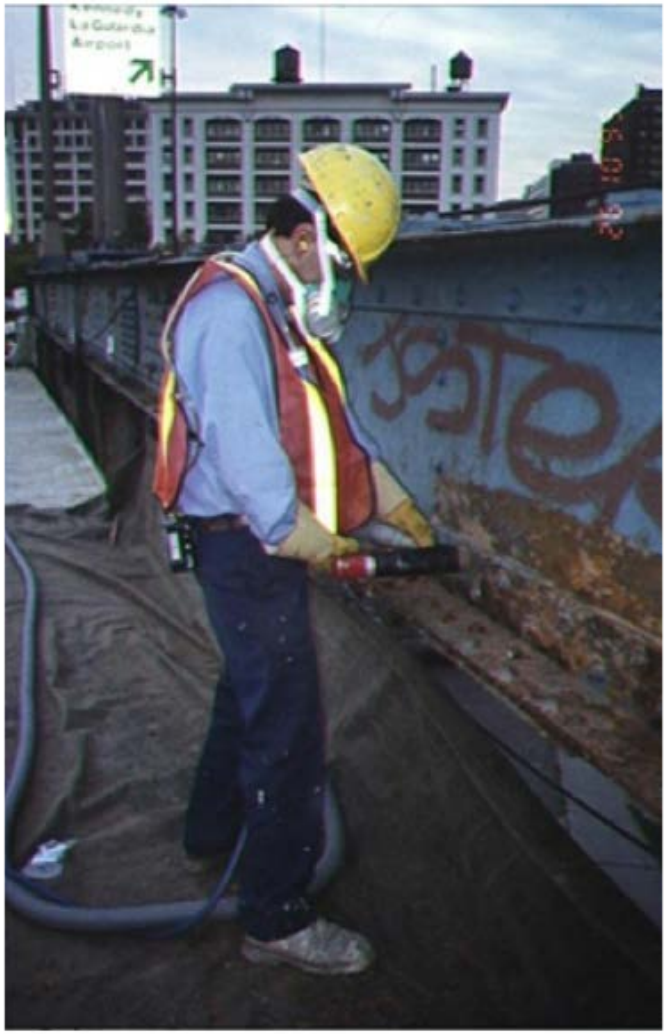
OSHA requires that employers protect their employees in the following ways:

Workplace assessment - An assessment of hazards workers will face must be performed, if personal protective equipment is the chosen option to protect employees.

Eliminate hazards - If possible, the employer must eliminate or reduce those hazards. This can be done by using engineering or administrative controls.

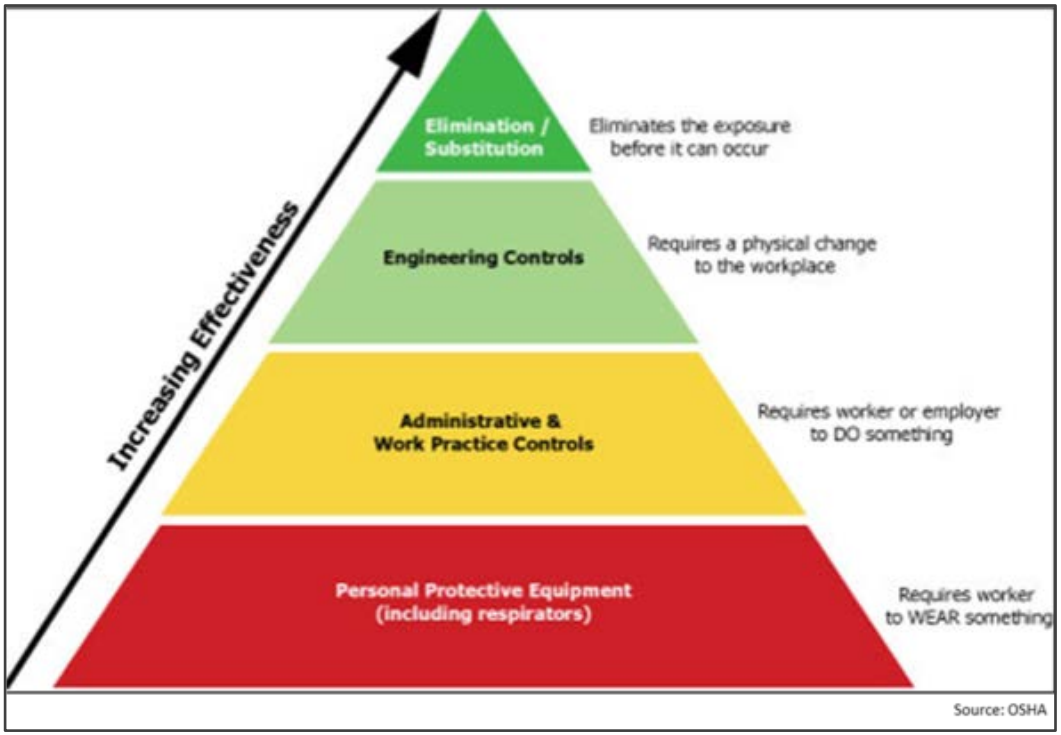
Use appropriate Personal Protective Equipment (PPE) - If hazards can't be eliminated, then the use of PPE can be implemented.

Remember, PPE doesn't make the hazard go away. It only lessens the exposure to the hazard. It is considered the last line of defense.



This graphic illustrates the effectiveness of the systems used to prevent and control hazards:

- Elimination/substitution provides the highest level of protection against hazards. The hazard is eliminated from the workplace or a safer item/substance is substituted for the more hazardous item/substance.
- Engineering controls are the second most effective means of protecting employees from hazards, requiring a physical change to the workplace, followed by administrative and work practice controls.
- PPE is the last resort; it is the least effective.



Administrative Controls

Administrative controls require the worker to Do Something. This includes work processes, such as:

- **Proper procedures** – workplace rules and other operation-specific rules
- **Inspection and maintenance** – regularly inspect tools and equipment; keep them well maintained; remove from service any damaged or broken items
- **Housekeeping** - ensure the work area is free from hazards
- **Supervision** - ensuring workers are adequately trained and managed
- **Regulated areas** – designate areas for lunch and break times; no eating, drinking, smoking, chewing tobacco or gum, and applying cosmetics in workplace
- **Limit exposure by time and distance** – shorten amount of time a worker is exposed to task involving the hazard; distance hazard from workers

Administrative Controls

Here are some examples of administrative controls to reduce noise reduction:

- Operate noisy machines during shifts when fewer people are exposed
- Limit the amount of time a person spends at a time source
- Provide areas where workers can gain relief from noise sources
- Control noise sources through distance

Types of PPE

There are many types of PPE, which includes protective clothing or equipment. OSHA regulations state:

"When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the use of protective clothing or equipment.

PPE may also be appropriate for controlling hazards while engineering and work practice controls are being installed".

OSHA also recognizes that all forms of PPE must meet certain industry performance standards developed by professional organizations, as published by The American National Standards Institute (ANSI), or similar groups, such as The American Society for Testing and Materials International (ASTM).

Head Protection

OSHA regulations state that “protecting employees from potential head injuries is a key element of any safety program.”

A head injury can impair an employee for life or it can be fatal. Wearing a safety helmet or hard hat is one of the easiest ways to protect an employee’s head from injury. Hard hats can protect employees from impact and penetration hazards as well as from electrical shock and burn hazards.

Employers must ensure that their employees wear head protection if any of the following conditions exist at the work site:

- Objects might fall from above and strike them on the head;
- They might bump their heads against fixed objects, such as exposed pipes or beams; or
- There is a possibility of accidental head contact with electrical hazards.

Eye and Face Protection

During the work day, employees can be exposed to a large number of hazards that pose danger to their eyes and face.

Employers must ensure that employees have appropriate eye or face protection if they are exposed to:

- eye or face hazards from flying particles,
- molten metal,
- liquid chemicals, acids or caustic liquids,
- chemical gases or vapors,
- potentially infected material, or
- potentially harmful light radiation, such as welders or lasers.

Safety Glasses

- Safety glasses are intended to shield the worker's eyes from impact hazards such as flying fragments from glass or metal, large chips of wood, and airborne particles.
- Workers are required to use eye safety spectacles with side shields when there is a hazard from flying objects. Glasses without side shields are not acceptable eye protection for work areas where there are impact hazards.
- Safety glasses can be fitted with corrected or impact-resistant lenses, and side shields when appropriate, to suit your workplace.

Goggles

- Goggles are tight-fitting to protect the eyes and the facial area around the eyes. Goggles provide protection from impact, dust and splashes.
- You are able to wear some goggles over your corrective lenses, as long as they don't interfere with the function of the glasses.

Welding Shields

- Welding shields protect eyes from burns caused by infrared or intense radiant light. They can be constructed of vulcanized fiber or fiberglass and fitted with a filtered lens.
- Welding shields also protect both the eyes and face from flying sparks, metal spatter and slag chips produced during welding, brazing, soldering and cutting operations.
- OSHA requires that filter lenses have an appropriate amount of shade number to protect against harmful light radiation.

Face Shields

- Face shields are intended to protect the entire face flying fragments, objects, large chips, splashing liquids and particles.
- When worn alone, face shields do not protect employees from impact hazards. You must use face shields in combination with safety glasses or goggles, even in the absence of dust or potential splashes, to protect your eyes.

Eye and Face Protection

- Employees who wear prescription glasses must also wear required eye protection. There are eye and face protection equipment that fit comfortably over glasses.
- Dust and chemicals present additional hazards to contacts wearers. OSHA recommends that workers have an extra pair of contacts or eyeglasses in case of contact failure or loss.

True or False

You do not have to wear goggles or a face shield if you wear prescription glasses.

A. True
B. False

True or False

You do not have to wear goggles or a face shield if you wear prescription glasses.

A. True
B. **False**

Hearing Protection

Hearing protection devices (HPDs) are considered the last option to control exposures to noise. Noise reduction can help you avoid hearing loss.

HPDs are generally used to reduce noise during the necessary time it takes to implement engineering or administrative controls, or when such controls are not feasible.

Examples of HPDs:

- Disposable foam plugs
- Molded ear plugs
- Noise cancelling ear plugs
- Ear muffs

When you are choosing a HPD, consider the Noise Reduction Rating (NRR) of the device (manufacturers must provide this information for each device). The NRR measures the effectiveness of the device in various noise situations.

Types of Gloves

There are many types of gloves available today to protect against a wide variety of hazards. The nature of the hazard and the operation involved should determine your selection of gloves. The variety of potential occupational hand injuries makes selecting the right pair of gloves challenging.

It is essential that you use gloves specifically designed for the hazards and tasks found in your workplace because gloves designed for one function may not protect against a different function even though they may appear to be an appropriate protective device.

Anti-vibration

Cut resistant

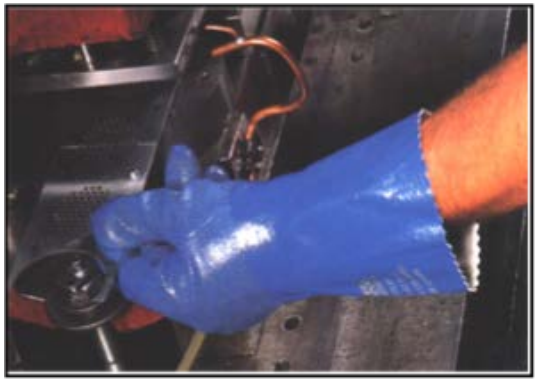
Leather palm

Types of Gloves

There are many factors that can determine the appropriate type of glove to use:

- Type of chemical handled
- Nature of contact (total immersion, splash, etc.).
- Duration of contact.
- Area requiring protection (hand only, forearm, arm).
- Grip requirements (dry, wet, oily).
- Thermal protection.
- Size and comfort.
- Abrasion/resistance requirements.

Protective gloves are made from a wide variety of materials and designed for many types of workplace hazards.



Permeation resistant

In general, gloves fall into four groups:

- Gloves made of leather, canvas or metal mesh;
- Fabric and coated fabric gloves;
- Chemical- and liquid-resistant gloves;
- Insulating rubber gloves for electrical work.

Be sure to choose carefully for the work tasks that you are performing.

Heat resistant

Quick Quiz

If a hazard assessment indicates a need for full body protection against toxic substances or harmful physical agents, your protective clothing:

A. Can be borrowed from a co-worker without being checked by your employer

B. Must function properly and for the purpose for which it is intended.

C. Can be any type of material as long as you are covered.

Quick Quiz

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Training Requirements

Employers should make sure that each employee demonstrates an understanding of the PPE training as well as the ability to properly wear and use PPE before they are allowed to perform work requiring the use of the PPE.

If an employer believes that a previously trained employee is not demonstrating the proper understanding and skill level in the use of PPE, that employee should receive retraining.

Other situations that require additional or retraining of employees include the following circumstances: changes in the workplace or in the type of required PPE that make prior training obsolete.

The employer must document the training of each employee required to wear or use PPE by preparing a certification containing the name of each employee trained, the date of training and a clear identification of the subject of the certification.

Employer Responsibilities

To ensure the greatest possible protection for employees in the workplace, employers are responsible (along with employees) in establishing and maintaining a safe and healthful work environment.

In general, employers are responsible for:

- Performing a “hazard assessment” of the workplace to identify and control physical and health hazards.
- Identifying and providing appropriate PPE for employees.
- Training employees in the use and care of the PPE.
- Maintaining PPE, including replacing worn or damaged PPE
- Ensuring that employee owned PPE is adequate, properly maintained and sanitary.
- Periodically reviewing, updating and evaluating the effectiveness of the PPE program.

Employer Responsibilities

Employees are also responsible for maintaining a safe and healthful work environment.

Employees should:

- Actively participate in training sessions on PPE,
- Consistently wear appropriate PPE, as required,
- Care for, clean and maintain PPE, and
- Immediately inform a supervisor of the need to repair or replace PPE.

Can you identify the hazards and the PPE needed?

Take a good look at the picture.

Can you identify the hazards and the PPE needed?

Take a good look at the picture.

Hazards:

- Floor opening with fall hazard
- Sharp edges on sheet metal
- Bump hazard overhead
- Potential confined space hazard

PPE needed:

- Fall protection
- Gloves
- Goggles
- Hard hat

Can you identify the hazards and the PPE needed?

Take a good look at the picture.

Can you identify the hazards and the PPE needed?
Take a good look at the picture.

Hazards

Workers may be exposed to

- Traffic hazards
- Noise
- Weather conditions (heat)

PPE needed:

- Highly visible/reflective vests
- Hearing protection
- Heat-resistant soles on shoes
- Eye protection
- Gloves

Congratulations!

You have completed the Personal Protective Equipment module.

Click here to access the final quiz.