



HUMAN RESOURCES TRAINING & DEVELOPMENT

1201 S. Figueroa St., Los Angeles CA 90015 • (213) 765-4458

Week of: December 12, 2022

Source: NIOSH

Topic: Personal Protective Equipment

According to the National Institute for Occupational Safety and Health (NIOSH), personal protective equipment is a main source of protection for emergency and recovery workers. It is also important for employees who may be exposed to a variety of other health hazards which cannot fully be controlled by other means (such as elimination, substitution, engineering, or administration).

It is necessary to protect emergency response and recovery workers from physical, chemical and biological hazards. Routes of exposure include inhalation, dermal (skin) contact, ingestion or contact through mucous membranes (eyes, nose, mouth). Therefore, main protective equipment includes respirators, eye protection, hearing protection and protective clothing. Depending on the hazard, the recommendations on the use of PPE change. Some examples of PPE may include *gas masks, gloves, overalls, boots, and goggles*.

Personal protective equipment is very important for any employee who has contact with harmful materials.

Types of Personal Protective Equipment:

Eyes- Eyes are always at risk of exposure to different hazards that may include contact with dust, metal particles, debris, glass particles, gas, chemicals, blood borne pathogens and thermal hazards. Exposure to these hazards may lead to the development of adverse illness that affect eyesight which can include eyeball lacerations, affectations to the cornea such as corneal abrasions, conjunctivitis, and burns.



Eye protection is vital to provide an appropriate response and assure health and safety of emergency response and recovery workers. The following resources provide information of the types of hazards workers might face and types of recommended eye protection. Eye related injuries at work can have different origins that may include contact with chemical substances, penetration with external objects, among others.



Hearing- Occupational hearing loss is a common work-related illness. Not just in everyday work activities but also in emergency settings where hazardous noise levels and ototoxic chemicals can affect emergency response and recovery workers hearing.

NIOSH has recommended exposure limits for occupational noise exposure to avoid hazardous exposures. Other types of controls and recommendations to reduce workplace noise such as hierarchy controls are available including elimination or substitution, engineering and administrative control and use of personal protective equipment such as earplugs or earmuffs.

LACC SAFETY SENTINEL

"Stay Alert, Don't Get Hurt!"



HUMAN RESOURCES TRAINING & DEVELOPMENT

1201 S. Figueroa St., Los Angeles CA 90015 • (213) 765-4458

There are multiple resources available to provide technical information to evaluate noise hazards in workplaces and also to prevent hear loss, monitoring and selection of low noise equipment is important to address this hazard.

Clothing- Protective clothing is designed to protect users from unintended dermal exposures that could lead to the development of an adverse health hazard. Depending on the hazard different types of protective clothing must be developed to create a barrier that protects workers from occupational hazards that could affect them through dermal contact.

There are different considerations that must be taken into account when selecting the appropriate protective clothing including the hazard, the material, design, durability comfort and functionality. Some examples of protective clothing include coveralls or fluid resistant garments. Usually these garments are designed to protect workers from chemicals and other body fluids such as urine, saliva, blood, etc.



It is important to take into account the shape, size of microorganisms, chemical properties of the fabric such as repellency, or pore size, and external factors that may affect the effectivity of the garment such as temperature or physical and chemical conditions.

Breathing/Respirators- Respirators are one of the most important pieces of personal protective equipment for workers when other control systems are not feasible to protect the health and safety of workers.

Respirators cover as minimum the nose and mouth of users and remove contaminants from the air by filtering airborne particles or chemical agents from air. This type of respirator is called an *air purifying respirator*.

Other type of respirator known as *supplied air respirator* supplies clean air from another source to the user, this last type includes *self-contained breathing apparatus* (SCBA) that include their own air supply and airline respirators that use compressed air from a remote source.

Particulate respirators can include particular filtering face-piece respirators which are usually suitable for single use, elastomeric respirators and powered air-purifying respirators. The selection of an appropriate respirator depends on the type of particle or chemical it is protecting from, users should perform fit testing prior to use and be aware of respiratory training, and check for NIOSH respirator approvals.



Additional Forms of PPE- Other additional forms of PPE can include, but are not limited to gloves, protective footwear, and hard hats. Specifications for the performance requirements for protective boots and shoes range in a variety of ways, some of which include impact or compression resistance, metatarsal (bones of the top of the foot) guarding, conductive protection, electrical hazard resistance, static dissipative, and puncture resistant. (Source: Grainger).

LACC SAFETY SENTINEL

"Stay Alert, Don't Get Hurt!"



HUMAN RESOURCES TRAINING & DEVELOPMENT

1201 S. Figueroa St., Los Angeles CA 90015 • (213) 765-4458

Footwear guidelines can be found in the OSHA General Industry section of 29CFR1910 Subpart I. Grading and testing of footwear safety characteristics is monitored by ANSI (American National Standards Institute) and the ASTM (American Society for Testing and Materials).

Employers must ensure that their employees wear head protection (Rated from Class A-C) if any of the following apply:

- 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.

Some examples of occupations in which employees should be required to wear head protection include construction workers, carpenters, electricians, linemen, plumbers and pipefitters, timber and log cutters, welders, among many others. Whenever there is a danger of objects falling from above, such as working below others who are using tools or working under a conveyor belt, head protection must be worn. Hard hats must be worn with the bill forward to protect employees properly. Protective headgear must meet ANSI Standard Z89.1-1986.

In general, protective helmets or hard hats should do the following:

- Resist penetration by objects.
- Absorb the shock of a blow.
- Be water-resistant and slow burning.
- Have clear instructions explaining proper adjustment and replacement of the suspension and headband.

TEST YOUR KNOWLEDGE

1. **True or False:** PPE may be used for workers when hazards cannot be fully controlled by other means such as administrative, elimination, engineering, or substitution controls.
2. What type of respirator filters particulates from the air? **A)** SCBA **B)** Air Purifying **C)** Welding Mask **D)** Supplied Air
3. **True or False:** When selecting a protective garment, it is important to take into account the shape, size of microorganisms, chemical properties of the fabric such as repellency, or pore size, and external factors that may affect the effectivity of the garment such as temperature or physical and chemical conditions.
4. Whenever there is a danger of objects falling from above, such as working below others who are using tools or working under a conveyor belt, _____ protection must be worn.? **A)** Eye, **B)** Ear, **C)** Foot, **D)** Head.
5. **True or False:** Because occupational hearing loss is a common work-related illness; NIOSH has recommended exposure limits for occupational noise to avoid hazardous levels?
6. Metatarsal protection refers to? **A)** Ears, **B)** Respiratory/Breathing, **C)** Foot, **D)** Inner Ear

LACC SAFETY SENTINEL

"Stay Alert, Don't Get Hurt!"