

Personal Protection Equipment

29 CFR 1910 Subpart I

Introduction

- It is important that employees be provided a workplace that is free from recognized hazards that cause or are likely to cause death or serious physical harm.
- The methods available to control workplace hazards include the following:
 - Substitution of a safer product or procedure,
 - Engineering controls,
 - Administrative controls, and
 - Personal Protective Equipment (PPE).

Introduction

- Engineering controls are the best way to protect against a hazard.
 - Examples of engineering controls include guardrails and ventilation.
- When effective engineering controls are in place, PPE may not be required.
- When engineering controls and administrative controls fail to control hazards, PPE is required.
- **PPE is the last defense from a hazard.**

What is PPE?

- Clothing or other equipment workers wear to protect themselves from job hazards.
- PPE stands between you and the hazard.
- PPE includes, but is not limited to the following:
 - Hard hats,
 - Safety glasses,
 - Goggles,
 - Face shields
 - Ear plugs or muffs,
 - Toe or foot protectors,
 - Gloves,
 - Respirators,
 - Flash protection clothing,
 - Chemical splash protection clothing, and
 - Personal fall arrest devices.

Why is PPE Needed?

- PPE is needed because not all hazards that exist in a plant can be effectively controlled.
- Other hazard control measures often fail to eliminate or reduce the hazard to acceptable levels.
- PPE doesn't eliminate the hazard either.
- But when used properly it protects workers from the hazards in the work environment.

Why is PPE Needed?

- We are surrounded by hazards. These hazards fall into two categories:

• Health Hazards	• Safety Hazards
Health hazards include:	Safety hazards include:
• Oxygen deficiency	• Injuries from falling or flying objects
• Chemical vapors	• Fall from ladders and scaffolds
• Welding fumes	• Burns
• Asbestos, Silica, Metal Dust	• Electrocutation
• Temperature extremes	• Lifting and moving tools and materials
• Noise	



Why is PPE Needed?

- Safety hazards cause immediate harm.
- Some health hazards also cause immediate harm.
- An oxygen deficient atmosphere can take a life in a matter of minutes.
- But some health hazards cause harm only after repeated or long exposures.

What PPE is Available?

- PPE is usually named for the body part it protects.
- The major groups of personal protective equipment are:
 - Head protection,
 - Foot and leg protection,
 - Ear protection,
 - Eye and face protection,
 - Respiratory protection,
 - Arm and hand protection, and
 - Torso protection.

What PPE is Available?

- Other kinds of PPE include:
 - Safety harnesses and lanyards, and
 - Personal flotation devices for working near or over water.



How Do We Know Our PPE is Acceptable?

- To be acceptable, PPE should be tested and approved by NIOSH and/or meet standards set by ANSI.



Why Should We Protect Our Feet and Legs?

- About 200,000 injuries happen to defenseless toes and feet every year.
- Protective footwear would prevent most of these injuries.
- Some hazards that require additional foot and leg protection beyond that provided by sturdy work shoes include:
 - Falling objects,
 - Rolling objects,
 - Use of tampers or jackhammers, and
 - Corrosive chemicals.

Head Protection

- We need head protection because thousands of head injuries happen every year in the power generation industry.
- Head injuries are prevented when workers wear head protection.
- Hard hats protect your head from risks of:
 - Impact from bumping your head on overhead objects
 - Impact from falling objects or tools
 - Electric shock or burn

Head Protection

- Periodically clean your hardhat and suspension with mild soap and water.
- Inspect your hard hat for any signs of wear.
- Look at the suspension to be certain it is in good working order.
- If any signs of wear are present, replace the suspension immediately.
- If the outer shell is damaged, replace the complete hard hat.

Head Protection

- Adjust the suspension so the shell does not touch your head.
- Always wear your hard hat with the bill facing forward and never deface the shell with paint as this can harm the integrity of the shell material.
- Do not place stickers on hard hats because this can degrade the dielectric value of the shell.



Eye Protection

- Safety glasses, goggles, and face shields will prevent most eye injuries. ANSI Z87.1 approved safety glasses with side shields are required whenever there is possibility of eye injury.
- The need for different levels of protection will vary with the job selection.
- Face shields or goggles may be required if there is an increased danger of eye injury.
- Side shields or wrap around lenses are required.



Eye Protection

- Some hazards could include the following:
 - Airborne particles
 - Splashes from chemicals
 - Electric arcs or sparks
 - Radiant energy (welding)
- Select the eyewear that supplies you with the level of protection that is needed.

Hearing Protection

- Exposure to high noise levels over a period of time can cause permanent hearing loss.
- If noise levels are above 85 dB hearing protection is recommended and if noise levels are above 90 dB hearing protection is required.

Hearing Protection

- Hearing protection can be ear plugs or muffs, or a combination of the two.
- Plugs come in a variety of styles.
- Soft foam or pre-molded are the most common types and are usually disposable.
- Properly inserted, ear plugs can decrease the noise exposure by 25 to 30 dB.

Hearing Protection

- Ear muffs can decrease noise exposure by about 25 dB.
- Muffs have a soft outer seal that must make good contact with the side of the head.
- When using muffs, be sure there is a good seal between the head and the ear cup seals on the muffs.



Lung Protection

- Respirators are a type of PPE that protect workers from respiratory hazards.
- The use of respiratory protection is addressed in the Company's Respiratory Protection Program Standard #SHS 440, which should be referenced for additional information.



Hand Protection

- Like other PPE the proper selection of hand protection starts with assessing the job.
- If chemicals are to be used you can check the MSDS sheets to determine which type of glove is best suitable for your protection.

Hand Protection

- Welding requires a leather glove with long cuffs, rough surfaces require leather gloves but may not require the long cuff; cotton gloves may provide adequate protection for most routine jobs.



Hand Protection

- When handling sharp pieces or cutting objects with a knife, a cut resistant glove would be best suited.
- Rubber gloves used for protection against electrical hazards must conform to the Company's Electrical Work Safety Policy



Other Types of PPE

- Respirators,
- Fall protection,
- Aprons to protect you from chemical splashes,
- Welding hoods and leather coats to protect you from the radiant energy and sparks.

Who Is Responsible?

- The company is responsible for furnishing appropriate PPE for the job and training workers in when and how to properly use PPE.
- Workers are responsible for utilizing the PPE required for the job.



Who Is Responsible?

- For PPE to be effective, it must be properly selected and used according to manufacturers' recommendations.
- Inspect your PPE each day before use. If PPE is found to be defective, replace it.
- The Company must approve all PPE.

Questions?