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- Personal Protective Equipment (PPE) must be provided when necessary by reason of hazards encountered that are capable of causing injury or impairment
- PPE is not a substitute for engineering, work practice, and/or administrative controls
- PPE creates barrier between hazard and route of entry
- Use of PPE does not eliminate the hazard so if the equipment fails then exposure occurs
- Must be worn to provide protection



Best Practices

- Assess the workplace to determine if hazards are present
- Select and provide appropriate PPE that fits each affected employee
- Train employees on how to use PPE correctly

- The Agency must assess the workplace to determine if hazards are present that necessitate the use of PPE
- Hazards encountered may include chemical exposures, falling or dropping objects, particulates, temperature extremes, light radiation, moving equipment and parts, sharp objects, etc.

- Protects each employee from identified hazards
- Is of safe design and construction
- Is sanitary and reliable
- Provides each employee with a good fit
- Meets American National Standards Institute (ANSI) standards or other applicable approval agency standard



- When is PPE necessary
- What PPE is necessary
- How to properly don, doff, adjust and wear PPE
- The limitations of PPE
- The proper care, maintenance, useful life and disposal of PPE



- Changes in the workplace
- Changes in types of PPE to be used
- Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained training
- Accident Investigations



- Skin Absorption
- Ingestion
- Injection
- Inhalation
- Knowing the hazards and how to protect yourself is the key to your safety. Create a barrier.



- Eye & Face Protection
- Respiratory Protection
- Head Protection
- Foot Protection
- Electrical Protective Devices
- Hand & Skin Protection
- Hearing Protection
- Fall Protection

- Required when employees are in areas where there is exposure to eye and face hazards from flying particles, molten metal, liquid chemicals, acids, caustic liquids, chemical gases or vapors or potentially injurious light radiation
- Must comply with ANSI Z87



- Thousands of people are blinded each year from work-related injuries
- With eye or face protection, injuries can be prevented
- "One incident is all it takes"



- Safety Glasses
- Goggles
- Side Protectors
- Face Shields
- Welding Shields
- Laser Safety Goggles

- Required when employees are in areas where effective engineering controls are not feasible to protect the health of the employee from harmful dusts, fogs, fumes, mists, gases, smokes, sprays or vapors
- Must comply with NIOSH

- Inhalation of hazardous materials damages delicate structures of the lung
- Damaged lungs are more susceptible to respiratory disease
- Most direct route to the bloodstream



- Exposure levels exceed the PEL (Permissible Exposure Level)
- During installation of engineering or work practice controls
- Maintenance and repair activities that may result in exceeding the PEL
- Emergency Response where type and/or concentration of contaminant is unknown
- Voluntary Usage

Air-purifying

- Can remove contaminants in the air that you breathe by filtering out particulates (e.g., dusts, metal fumes, mists, etc.).
- Particulate respirators (also called dust, fume, and mist respirators or masks)
- Chemical cartridge respirators that can have a combination of chemical cartridges, along with a dust pre-filter.

Supplied-air

Self-Contained Breathing Apparatuses (SCBAs)



- Medical Exam
- Selection based on hazard
- Fit Testing
- Facial Hair
- Inspection of Equipment
- Specific Training on Operation
- Limitations

- Required when employees are in areas where there is a potential for injury to the head from falling or moving objects or when they are exposed to electrical conductors which could be contacted by the head
- Must comply with ANSI Z89



- Injuries to the head could involve your:
 - Brain
 - Eyes
 - Nose
 - Mouth
- For this reason, head protection and safety are very important

- Limited protection by REDUCING the force of small falling objects striking or penetrating the TOP of the shell
- Does not provide front, side or rear impact or penetration protection
- Inspect daily for signs of dents, cracks, penetrations, and any damage due to impact, rough treatment or wear
- If fails inspection, remove from service



- Electrical Shocks
 - Accidents result in shocks and burns
- Head Impact
 - Falling or flying objects cause sprains, fractures, and concussions
- Splashes, Spills & Drips
 - Materials can irritate and burn eyes and skin

- Required when Agencies are in areas where there is danger of foot injuries due to falling and rolling objects, slip hazards or objects piercing the sole, and where employees are exposed to electrical hazards
- Must comply with ASTM F2413-05



- Impact injuries
- Spills and splashes
- Compression injuries
- Electrical shocks
- Slipping
- Heat/Cold

- Impact and compression protection for toes
- Metatarsal protection
- Electrical hazard protection (600 volts or less under dry conditions)
- Conductive protection (minimize static electricity)
- Protection against punctures and penetration



- Slip resistant soles
- Compatible with environment
- Assure proper fit
- Inspect for cuts, tears, cracks, worn soles and other damage
- Care for footwear according to manufacturer's recommendations



- Required when employees are in areas where there may be exposure to substantial electrical voltage
- Rubber is considered best material
- Must comply with ANSI requirements for rubber insulating gloves, matting, blankets, hoods, line hose and sleeves
- Arc Flash PPE

- Required when employees are in areas where their hands and body are exposed to skin absorption of harmful substances, severe cuts or lacerations, chemical or thermal burns, etc.
- Protection must be compatible with hazard



Traumatic injuries

Cuts, punctures, sprains or crushing from equipment

Contact injuries

 Contact with toxic chemicals, biological substances, electrical sources, extreme temperatures

Repetitive motion

Same hand movement over extended time periods

- Choose compatible material as no one material is suited for all chemicals
- May be well suited for one and dangerous for another
- Manufacturer's chemical resistance guide
- Be careful with chemical combinations
- Decontamination vs. Disposal
- Personal Hygiene wash up

- Thickness consider required sensitivity and flexibility required to do job - thinner material will sacrifice chemical resistance
- Length
- Finishes and Linings

- Required when employees are in areas where there is exposure to excessive noise levels (8 hour TWA > 85 dbA) (TWA – Time Weighted Average; dbA – Decibel A-weighting)
- Recommended for use in high noise areas such as MER's (Modulation Error Ratio) and for use with high noise operations
- Must have appropriate NRR (Noise Reduction Rating) (muffs do not always provide more protection)



Damage to the delicate structures in your ear can cause one of two types of hearing loss:

- Conductive blocks transmission of sound to inner ear - medical/surgical treatment available for most
- Sensorineural involves organ of Corti and auditory nerve - almost always irreversible

Most hearing loss in the workplace is sensorineural

- Required when risk of falling at heights of 6 feet or greater when area not guarded or protected by other fall protection measures
- Work at any height in aerial lifts, powered platforms and similar equipment
- Body Harnesses vs. Belts

- Always check PPE for damage before and after you use it
- Clean PPE before storing
- Dispose of and replace damaged PPE
- Properly store PPE and avoid conditions that could damage it, such as heat, light, moisture, etc.



- PPE is provided by Supervisor
- If performing activity and you do not have PPE, contact Supervisor for PPE prior to starting activity
- Employee may be responsible for lost or damaged PPE
- State Equipment Use Policy



- Employees must use PPE in accordance with training and instructions
- Most job activities require the use of PPE
- PPE use is a requirement of the job
- If the employee cannot use the PPE then alternative PPE must be selected, the job must be modified to eliminate the hazard requiring PPE or the employee must change jobs



- Employee cannot sign waiver and accept risk of injury
- Would not remove liability
- Unethical to knowingly place an employee in an unprotected hazardous situation
- PPE is provided to protect employee and is not intended as an inconvenience

- The Agency SHALL ensure that employees are provided and use appropriate Personal Protective Equipment when they are exposed to hazards requiring their use
- Use of PPE must be incorporated into employee work plans and will be enforced as any other key responsibility/dimension including disciplinary action and may affect workers' compensation eligibility



Thank you | questions