



Safety Training Presentation Personal Protection Awareness

Institute of Occupational Safety and Health

Objectives: Participants will:

- ▶ Analyze current OSHA standards for respiratory protection
- ▶ State the purpose and use of respirators
 - ▶ Identify and select different types of respirators
 - ▶ Identify requirements for the use of respiratory protection
- ▶ State the Purpose and use of all Personal Protective equipment (PPE)



OSHA Standards: 29 CFR 1910.134

- ▶ Standard: workplace respiratory protection
- ▶ Employer provides respirators to employees
- ▶ The employer shall be responsible for the establishment and maintenance of a respiratory protection program.



OSHA Standards: 29 CFR 1910.134

- ▶ Primary employer safety goal is engineering and administrative controls
- ▶ Annual fit test and whenever conditions change
- ▶ Must be worn whenever you are working in a hazardous atmosphere





Respirator Safety: OSHA



OSHA: <https://www.youtube.com/watch?v=sFGqbDbSSpM>

Respirator Purpose

- ▶ A respirator protects the user from harmful inhalation of toxic atmosphere hazards such as:
 - Dusts, fogs, fumes, mists, gases, smokes, sprays, fibers or vapors
- ▶ The primary objective shall be to prevent contamination from toxic vapors



Respiratory Hazards

- ▶ Must be evaluated by supervisor
 - When First Hired
 - If you are a New user
- ▶ Working with new chemicals
- ▶ **If any conditions changed, stop and contact supervisor**



Major types of respirators

Two Types:

- ▶ Air Purifying
- ▶ Atmosphere supplying respirators
- ▶ Must be approved by NIOSH
- ▶ Medical evaluation required



Air Purifying

- ▶ Air Purifying respirators: removes contaminants by passing ambient air through the air purifying filter, cartridge or canister.
- ▶ Includes dust mask



Air Purifying Protective Equipment

Dust Mask



Half Mask

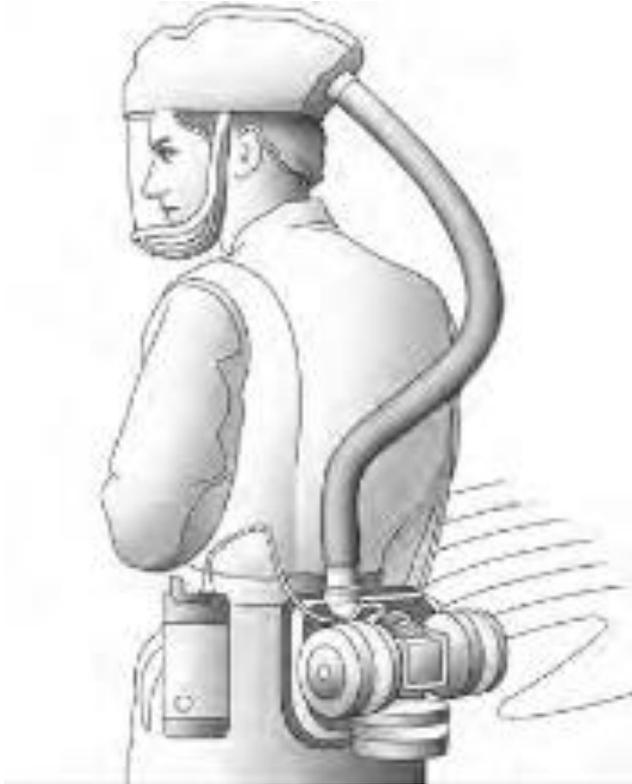


Full Face



Air Purifying Protective Equipment

Loose Fitting Powered



Hood Powered



Atmosphere Supplying

- ▶ Supplies the user with breathing air from other sources (compressors, compressed air) not ambient air
- ▶ For IDLH environments



Atmosphere Supplying



Supplied Air Respirator



Abrasive Blasting
Continuous flow



Self Contained
Breathing Apparatus
(SCBA)

Selection of respirators

- ▶ Based on respiratory hazards worker exposed to
- ▶ Only NIOSH certified respirators should be used
- ▶ Selected from different models and sizes so it properly fits employee
- ▶ If exposure cannot be identified, the atmosphere should be considered IDLH



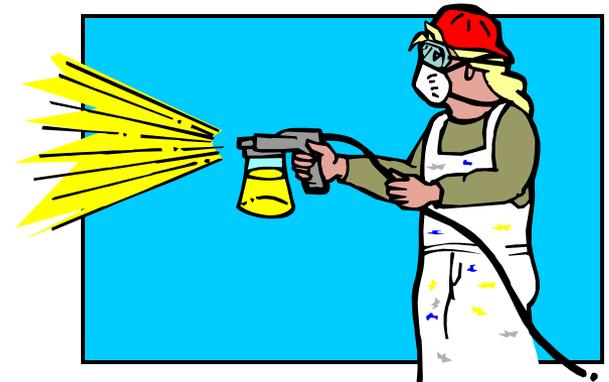
Selection of respirators

- ▶ For Immediate Danger of Life or Health, (IDLH) atmospheres:
 - Full face pressure demand SCBA with minimum service life of 30 minutes.
 - Supply on demand (SAR) with self contained air supply.



Selection of respirators

- ▶ For Non-IDLH atmospheres:
 - Employer provides a respirator that is adequate for the protection of employee health.
 - Dust Mask, Full Face piece



Requirements: Evaluation

- ▶ Must be or will work in an environment that requires a respirator
- ▶ Medical Evaluation is provided by the employer to determine the employee ability to use a respirator
- ▶ A medical evaluation questionnaire is mandatory



Requirements: Fit Tested

- ▶ Must be Fit Tested with same brand, model and size that will be used
- ▶ Tested before first use
- ▶ Note: Facial hair may not be permitted if employee will use a respirator that requires tight seal



Respiratory Protection

All respirators must be fitted properly, and their facepiece-to-face seal must be checked with each use.

The following conditions will interfere with the seal.

- ▶ Facial hair (sideburns or beards)
- ▶ Skullcaps
- ▶ Temple bars on glasses (especially when wearing full-face respirators)
- ▶ Absence of upper, lower, or all teeth
- ▶ Absence of dentures
- ▶ Gum and tobacco chewing



Requirements: Maintenance

- ▶ Respirators should be clean and disinfected as often as necessary if used by one employee.
- ▶ After each use if used by more than one employee
- ▶ Stored and protected from damage, dust, sunlight
- ▶ *Inspected before use and if found defective do not use and notify supervisor*



Personal Protective Equip.

- ▶ Personal Protective Equipment (PPE)
- ▶ When worn correctly, PPE is designed to protect you from injury.
- ▶ You must inspect it and keep it in good condition.
- ▶ Many workers are injured on the job because they are not using PPE.



Clothing and Jewelry

- ▶ Your clothing must comply with good general work and safety practices.
- ▶ Do not wear clothing or jewelry that could get caught in machinery or otherwise cause an accident.
- ▶ Ex.) Loose clothing, baggy shirts, or dragging pants. Your shirt should always be tucked in unless you are performing welding.



Hard Hats

- ▶ The outer shell can protect your head from a hard blow.
- ▶ The webbing inside keeps a space between the shell and your head.
- ▶ You should never wear anything under your hard hat.



101F16A.EPS



101F16B.TIF

Eye and Face Protection

- ▶ Wear eye protection whenever there is even the slightest chance of an eye injury.
- ▶ Must meet American National Standards Institute (ANSI) requirements.
- ▶ May be a good idea to wear sun glasses to prevent glare damage to eyes– your eyes can get sunburned too!



SAFETY GLASSES

101F17A.TIF



GOGGLES

101F17B.TIF



Eye and Face Protection

Eye and face protection should be used during the following tasks:

- ▶ Grinding and chipping
- ▶ Using power saws and other tools that can throw out solid material.
- ▶ Working with chemicals
- ▶ Arc welding.



Gloves

- ▶ Gloves help prevent cuts and scrapes when you handle sharp or rough materials.
- ▶ Heat resistant–gloves are sometimes used for hot materials.
- ▶ Electricians use special rubber–insulated gloves when they work on or around live circuits.
- ▶ Electrician’s rubber insulated gloves should be inspected regularly to make sure they will protect the wearer.



Glove Use

- ▶ Gloves can protect skin from irritating chemical exposure.
- ▶ Gloves can also protect skin from blood born pathogen exposure.
 - Always use gloves if assisting a teammate with an injury OR handling contaminated work area (ie. Feces, blood, puss, urine or other bodily fluids).
- ▶ Removal of Contaminated Gloves



Leg Protection

- ▶ Overalls or pants should not have loose, torn, or dragging fabric that can become caught on objects or pose a tripping hazard.
- ▶ **Never** wear shorts on a jobsite.
- ▶ Besides the greater risk of injuries, shorts expose your skin to the sun and a number of chemicals and substances that can cause skin irritations.
- ▶ Always tape your pants into rubber boot tops when working in concrete or with chemicals.

Foot Protection

- ▶ The best shoes to wear on a construction site are ANSI-approved shoes.
- ▶ The safety toe protects your toes from falling objects.
- ▶ The steel sole keeps nails and other sharp objects from puncturing your feet.
- ▶ **Never** wear canvas shoes or sandals on a construction site



101F21.EPS

Skin Protection

- ▶ Skin is susceptible to dermatitis (skin irritation) caused by exposure to chemicals that strip oils from the skin.
- ▶ Avoid this condition by using gloves and avoiding exposure to chemicals.
- ▶ Repeated exposure to wet concrete can cause concrete

Hearing Protection

- ▶ Damage to most parts of the body causes pain. But ear damage does not always cause pain.
- ▶ Exposure to loud noise over a long period of time can cause hearing loss, even if the noise is not loud enough to cause pain.
- ▶ Save your hearing by using hearing protection whenever you have to talk above normal levels.
- ▶ Clean earplugs regularly with soap and water to prevent ear infections.



Summary

- ▶ Re-cap current OSHA standards for respiratory protection, state the purpose and use of respirators, different types of respirators and discuss key requirements for the use of respiratory protection



Helpful OSHA Resources

- ▶ OSHA has many helpful programs, including assistance about safety and health programs, state plans, workplace consultations, voluntary protection programs, strategic partnerships, training and education, and more



References

- ▶ OSHA Website: www.osha.gov
 - OSHA 29 CFR 1910.134 – Respiratory Protection
 - OSHA 3389– Small Entity Compliance Guide for the Respiratory Protection Standard
 - OSHA E-Tool

