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The Basics of Personal Protective Equipment (PPE)

Assess the hazards that may require PPE. For those situations where engineering and controls do not eliminate a hazard, you will need to select appropriate gear

Types of PPE

Head Protection: Hard hats are necessary protective equipment, especially around construction and electricity. Hard hats can protect employees from impact hazards, penetration hazards, and electrical hazards.

Hand Protection: Gloves are the most common type of hand protection and they can protect employees from hazards like chemical burns, absorption of harmful chemicals, bruises, cuts, and fractures. Many types of gloves exist and they fall into four main categories: Fabric gloves and coated fabric gloves, Chemical-resistant and liquid-resistant gloves, Gloves made of leather, canvas or metal mesh, and Insulating rubber gloves (for protection from electrical hazards)

Eye and Face Protection: Employees encounter many eye and face hazards in the workplace. These hazards include molten metal, flying particles, caustic liquids, liquid chemicals, chemicals vapors and gases, light radiation, and possibly infected materials. The most common type of eye and face protection is safety glasses, but safety goggles, face shields, and welding masks may also be necessary.

Foot and Leg Protection: Foot protection like steel-toed boots can protect employees from hazards like falling or rolling objects, hot surfaces, and corrosive materials. In addition to steel-toed boots, other common types of PPE for the feet and legs are leggings (which are made from a strong material like leather and protect the lower legs), toe guards, safety shoes (which have impact-resistant toes and heat-resistant soles), electrically conductive shoes (to prevent static buildup) and nonconductive shoes (for working near electrical hazards).

Hearing Protection: Earplugs and earmuffs are the common types of hearing prevention used at industrial worksites. Many times workers overlook hearing hazards because they think the duration of the noise won't cause injury, but the louder a sound, the more quickly it can damage hearing.

Body Protection: Many conditions on the jobsite can warrant full-body protection such as safety suits, aprons, and visibility vests. Extreme temperatures, hot liquids, dangerous chemicals, and impact hazards related to machinery and tools can all mean this type of PPE is needed.

Respiratory Protection: Respiratory protection is essential in situations when employees may be exposed to anything harmful in the air like dust, fumes, gases, smoke or vapors. Respirators and facemasks cover the nose and mouth and must fit properly for them to work.

Source: https://www.safetyblognews.com/personal-protective-equipment-ppe-the-basics/

Respiratory Protection

Respirator Users: Almost all elements of the respiratory protection program affect respirator users and their knowledge of the principles of respiratory protection is integral to an effective program. Elements that have a more direct impact on the user include knowledge of selection criteria, medical evaluations, procedures for proper use, fit-testing, and maintenance procedures. Proper selection and, if appropriate, fit testing of tight fitting face pieces will assure that the respirator will provide adequate protection against the contaminants that affect use. Medical evaluations are necessary to determine whether the user is fit to wear a respirator without adverse health effects. Training on procedures for proper use and maintenance will assure the wearer that the wearer is using the respirator in a safe and healthful manner.

Medical Requirements: Employees need to be medically cleared to wear respirators before commencing use. All respirators generally place a burden on the employee. Negative pressure respirators restrict breathing, some respirators can cause claustrophobia and self-contained breathing apparatuses are heavy. Each of these conditions may adversely affect the health of some employees who wear respirators. A physician or other licensed health care professional operating within the scope of his/her practice needs to medically evaluate employees to determine under what conditions they can safely wear respirators.

Maintenance & Care of Respirators: The proper functioning of respirators and ensuring that the devices themselves do not pose a hazard to the user require a regular maintenance and cleaning schedule. In general, respirators should be inspected for basic function prior to each use and cleaned as often as necessary to prevent the occurrence of unsanitary conditions.

Fit Testing: All respirators that rely on a mask-to-face seal need to be annually checked with either qualitative or quantitative methods to determine whether the mask provides an acceptable fit to a wearer. The qualitative fit test procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a particular test agent while the quantitative use measuring instruments to measure face seal leakage. The relative workplace exposure level determines what constitutes an acceptable fit and which fit test procedure is required. For negative pressure air purifying respirators, users may rely on either a qualitative or a quantitative fit test procedure for exposure levels less than 10 times the occupational exposure limit. Exposure levels greater than 10 times the occupational exposure limit must utilize a quantitative fit test procedure for these respirators. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode.

Source: https://www.osha.gov/SLTC/etools/respiratory/respirator_basics.html