

Safety Newsletter

March, 2014

This Month's Topic: Personal Protective Equipment (PPE)

Hazards exist in every workplace in many different forms: sharp edges, falling objects, flying sparks, chemicals, noise and a myriad of other potentially dangerous situations.

Controlling a hazard at its source is the best way to protect employees. When engineering, work practice and administrative controls are not feasible or do not provide sufficient protection, employers must provide personal protective equipment (PPE) to their employees and ensure its use.

What is PPE?

Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.

PPE is not a substitute for good engineering or administrative controls or good work practices, but should be used in conjunction with these controls.

Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.

Selecting PPE

To ensure the greatest possible protection for employees in the workplace, the cooperative efforts of both employers and employees will help in establishing and maintaining a safe and healthful work environment.

In order to be able to choose the proper PPE, the individual must be aware of what hazards exist in the workplace. This involves obtaining information on the types of hazards present, the toxicity of the materials involved, and what other options are available to control exposure.

In general, employees should:

- Properly wear PPE
- Attend training sessions on PPE
- Care for, clean and maintain PPE
- Inform a supervisor of the need to repair or replace PPE

Head Protection

Head injuries are commonly caused by impact from falling or flying objects, and falling or walking into hard objects. PPE devices such as hard hats may protect you from objects falling on your head and, in a limited way, from electrical shock or burns. Hard hats should be worn in areas where there is potential for head injuries.

Eye and Face Protection

Eye protection must be worn where there is potential for injury to the eyes or face from small particles, toxic chemicals, flying objects or particles, large objects, thermal or radiation hazards, and lasers. According to the types of and extent of hazards, different PPE should be worn. PPE for the face and eyes includes devices such as safety glasses, goggles, and face shields. These must always remain clean and free of contaminants. Safety glasses or goggles must always be worn in laboratory areas.

"Make sure the selected PPE is matched appropriately to the task. Too much PPE can be as dangerous as not enough PPE."

Bo Bowman, P.E.
Sr. Project Manager,
Alisto Engineering Group, Inc.

Hard Hats

There are many types of hard hats available in the marketplace today. In addition to selecting protective headgear that meets ANSI standard requirements, employers should ensure that employees wear hard hats that provide appropriate protection against potential workplace hazards. It is important to understand all potential hazards when making this selection, including electrical hazards. This can be done through a comprehensive hazard analysis and an awareness of the different types of protective headgear available.

Hard hats are divided into three industrial classes:

- ✦ **Class A** hard hats provide impact and penetration resistance along with limited voltage protection (up to 2,200 volts).
- ✦ **Class B** hard hats provide the highest level of protection against electrical hazards, with high-voltage shock and burn protection (up to 20,000 volts). They also provide protection from impact and penetration hazards by flying/falling objects.
- ✦ **Class C** hard hats provide lightweight comfort and impact protection but offer no protection from electrical hazards.

Hard hats with any of the following defects should be removed from service and replaced when you see the ff:

- ✦ Perforation, cracking, or deformity of the brim or shell;
- ✦ Indication of exposure of the brim or shell to heat, chemicals or ultraviolet light and other radiation (in addition to a loss of surface gloss, such signs include chalking or flaking).

Always replace a hard hat if it sustains an impact, even if damage is not noticeable.



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Protective clothing, such as lab coats, should be worn when handling hazardous materials. This will prevent the contamination of skin and clothing.

Hand Protection

Selecting the proper gloves is very important since it is our hands that are often used to handle hazardous materials. These materials usually consist of caustic or toxic chemicals, biological substances, electrical sources, or extremely cold or hot objects that may irritate or burn your hands. In addition, traumatic injuries such as cuts, sprains and punctures may also occur. With the wide range of hazards, there also exists a wide range of gloves that may be used as PPE. It is important to know that not all gloves are protective against all chemicals.

Foot Protection

Injuries that may occur when the proper footwear is not worn are chemical and heat burns from spills and splashes of acids and caustics, compression injuries, electrical shocks, and slipping. Wearing the proper footwear is therefore, very important when working in areas where physical and chemical hazards are present.

Ear Protection

Exposure to high levels of noise may result in hearing loss. PPE should be worn when the noise level is 85 decibels or greater averaged over an 8-hour period of time. Popular types of hearing protection devices include earmuffs and foam earplugs.

Respiratory Protection

Respirators are used to prevent the exposure to air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. All respirator usage, which includes disposable respirators, air purifying respirators, and air supplied respirators, require annual fit testing and training prior to use.

All PPE clothing and equipment should be of safe design and construction, and should be maintained in a clean and reliable fashion. Employers should take the fit and comfort of PPE into consideration when selecting appropriate items for their workplace. PPE that fits well and is comfortable to wear will encourage employee use of PPE. Most protective devices are available in multiple sizes and care should be taken to select the proper size for each employee. If several different types of PPE are worn together, make sure they are compatible. If PPE does not fit properly, it can make the difference between being safely covered or dangerously exposed. It may not provide the level of protection desired and may discourage employee use.

Alisto Engineering 2014 Safety Statistics

| Motor Vehicle Accidents/ Total Miles Driven (01/01/14 – 01/31/14) | Lost Work Days/ Total Work Days (01/01/14 – 01/31/14) | Occupational Injuries and Illnesses (01/01/14 – 01/31/14) |
|---|---|---|
| 0/ 19,658 miles | 0 days*/ 22 days | 0* |

* From Edgewood Partners Insurance Center

PPE Survey Findings:

Most Challenging PPE category:

- Eye protection

Reasons for PPE Noncompliance:

- Uncomfortable
- Too hot
- Not available near the work task
- Poor fit
- Unattractive-looking

What employers had done or intended to do to improve compliance levels:

- Improve existing education and training programs
- Increased monitoring of employees
- Purchasing more comfortable PPE
- Tying compliance to individual performance evaluations
- Purchasing more stylish PPE
- Developing incentive programs to encourage greater PPE compliance

References:

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- <http://www.infectioncontroltoday.com/news/2010/08/workers-risking-injury-by-not-wearing-ppe.aspx>
- http://eeapthesafetypople.blogspot.com/2013_07_01_archive.html