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Measures to augment safety of workers with proper personal protective equipment

Overview

Personal Protective Equipment, commonly referred to as 'PPE', are equipment worn to minimize exposure to serious workplace injuries and illnesses. It can include items such as safety helmets and hard hats, gloves, safety goggles, earplugs, respirators, vests and full body suits. The hazards addressed by protective equipment include physical, electrical, heat, chemicals, biohazards, and airborne particulate matter.

The purpose of personal protective equipment is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels. However, PPE has the serious limitation that it does not eliminate the hazard at source and may result in employees being exposed to the hazard if the equipment fails.

We at Liberty Videocon General Insurance value the importance of ensuring safety of your workers at your workplace; and intend to suggest various PPE and their usage to augment the same. We sincerely hope that the measures suggested in this document will help in achieving maximum safety and protection of the workers at your place of work.



Source: <https://gossipdigest.files.wordpress.com/2014/06/commitment-to-safety.jpg>

The Requirement of PPE

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

In general, employers are responsible for:

- Performing a 'hazard assessment' of the workplace to identify and control physical and health hazards.
- Identifying and providing appropriate PPE for employees.
- Training employees in the use and care of the PPE.
- Maintaining PPE, including replacing worn or damaged PPE.
- Periodically reviewing, updating and evaluating the effectiveness of the PPE program.

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.

Selection

- 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 desired level of protection and may discourage employee use.

Hearing Safety

Noise-induced hearing loss is 100 per cent preventable. Once acquired, this type of hearing loss is permanent and irreversible. Therefore, prevention measures must be taken by employers and workers to ensure hearing protection at all times. Sound is measured in decibels (dB). A normal conversation takes place at about 60 dB, whereas a gunshot is above 130 dB. Most power tools operate at between 90 and 120 decibels, chickens

clucking inside a building are about 105 dB and a pig's squeal can reach up to 130 dB. Hearing protection should be worn if noise levels exceed 85 dB.



Some types of hearing protection include:

- **Single-use earplugs** are made of waxed cotton, foam, silicone rubber or fiberglass wool. They are self-forming and, when properly inserted, they work as well as most molded earplugs.

- **Pre-formed or molded earplugs** must be individually fitted by a professional and can be disposable or reusable. Reusable plugs should be cleaned after each use.
- **Earmuffs** require a perfect seal around the ear. Glasses, facial hair, long hair or facial movements such as chewing may reduce the protective value of earmuffs.

Head Protection

A head injury can impair an employee for life or it can be fatal. Wearing a safety helmet or hard hat is one of the easiest ways to protect an employee's head from injury. Hard hats can protect employees from impact and penetration hazards as well as from electrical shock and burn hazards.

In general, protective helmets or hard hats should do the following:

- Resist penetration by objects.
- Absorb the shock of a blow.

- Be water-resistant and slow burning.
- Have clear instructions explaining proper adjustment and replacement of the suspension and headband.



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

- 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).

Foot and Leg Protection

Employees who face possible foot or leg injuries from falling or rolling objects, or from crushing or penetrating materials, should wear protective footwear. If an employee's feet may be exposed to electrical hazards, non-conductive footwear should be worn. On the other hand, workplace exposure to static electricity may necessitate the use of conductive footwear.

Examples of situations in which an employee should wear foot and/or leg protection include:

- When heavy objects such as barrels or tools might roll onto or fall on the employee's feet.
- Working with sharp objects such as nails or spikes that could pierce the soles of ordinary shoes.
- Exposure to molten metal that might splash on feet or legs.
- Working on or around hot, wet or slippery surfaces.
- Working when electrical hazards are present.



Eye and Face Protection

Employees eyes and face may be exposed to hazards from flying particles, chemicals, acids or caustic liquids, gases or vapors, infected material, molten metal, light radiation etc.

Most common types of eye and face protection include the following:

- **Safety Eyeglasses:** These have safety frames constructed of metal or plastic and impact-resistant lenses. Side shields in some eyeglasses offers better protection.
- **Goggles:** These are tight-fitting eye protection that completely cover the eyes, eye sockets and the facial area immediately

surrounding the eyes and provide protection from impact, dust and splashes.

- **Welding Shields:** Made up of vulcanized fiber or fiberglass and fitted with a filtered lens, welding shields protect eyes from burns caused by infrared or intense radiant light. They also protect both the eyes and face from flying sparks, metal spatter and slag chips produced during welding, brazing, soldering and cutting operations.
- **Face Shields:** These transparent sheets of plastic extend from the eyebrows to below the chin and across the entire width of the employee's head. Face shields used in combination with goggles or safety spectacles will provide additional protection against impact hazards.



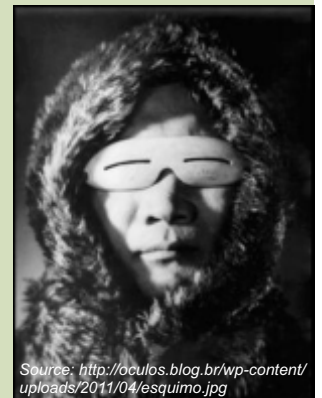
Hand and Arm Protection

If a workplace hazard assessment reveals that employees face potential injury to hands and arms that cannot be eliminated through engineering and work practice controls, employers must ensure that employees wear appropriate protection. Potential hazards include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures and amputations. Protective equipment includes gloves, finger guards and arm coverings or elbow-length gloves.



Trivia

- The first fire helmet had a high crown and broad brim and was invented by Jacobus Turck in the 1730s. The helmet was made of leather. A more modern-looking helmet was created in 1836 by Henry T. Gratacap. It was a reinforced, dome-shaped leather helmet with a front shield and a brim that rolled to a long back tail.
- Ray and Cecilia Benner invented the first mouldable pure silicone ear plugs in 1962. The earplugs were valued by swimmers, as well as those trying to avoid harmful noise, for their waterproof qualities.
- The people inhabiting the polar regions carved snow goggles from deer skull, wood, and shell to help prevent snow blindness. The Inuit goggles were curved to fit the user's face and had a large groove cut in the back to allow for the nose. In the early 20th century, goggles were worn by drivers of uncovered cars to prevent irritation of the eyes by dust or wind.



Source: <http://oculos.blog.br/wp-content/uploads/2011/04/esquimo.jpg>

Some Statistics

Data from the Bureau of Labor Statistics, USA show:

- Hard hats were worn by only 16% of those workers who sustained head injuries, although two-fifths were required to wear them for certain tasks at specific locations.
- Only 1% of approximately 770 workers suffering face injuries were wearing face protection.
- Only 23% of the workers with foot injuries wore safety shoes or boots.
- About 40% of the workers with eye injuries wore eye protective equipment.

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