

Appendix B

Employee Training Information

UNIVERSITY OF MICHIGAN PPE PROGRAM SUPERVISOR'S GUIDE FOR PROVIDING EMPLOYEE TRAINING

General Considerations

The information provided in this document will assist in complying with the training provisions of the MIOSHA Personal Protective Equipment regulations. Prior to conducting work requiring the use of personal protective equipment (PPE), employees must be trained to know:

- when and why PPE is necessary,
- what type is necessary,
- how it is to be worn,
- the limitations, and
- proper care, maintenance, useful life and disposal.

Upon completion of the training, the employee must be able to demonstrate the above-mentioned information. Any type of training format can be used as long as a hands-on session is incorporated, but the documentation of the training is required.

Information is provided for eye and face protection, head, foot and hand protection in this document. Each section can be used as needed and be adapted to individual workplaces after the completion of a Hazard Assessment to select the proper PPE.

Whenever PPE is used, employee comfort should be considered. When PPE does not fit properly, workers will tend not to use it. Follow the manufacturer's recommendations for proper PPE usage.

GOVERNING REGULATION

Michigan Occupational Health & Safety (MIOSHA) General Industry regulation, Part 33 "Personal Protective Equipment" and MIOSHA Construction regulation, Part 6 "Personal Protective Equipment", requires the University to provide their employees with the appropriate personal protective equipment (PPE) in order to perform their job safely. Employees are responsible for wearing the PPE they have been provided and caring for it in accordance with the instructions they have been given. Supervisors are responsible for ensuring that their employees wear their PPE when appropriate.

EYE AND FACE PROTECTION

Selection

National statistics show that three out of five workers who suffered an eye injury were not wearing eye protection. And, of those who did use eyewear, 40% were wearing the wrong eye protection for the job. It is also estimated that more than 1,000 eye injuries occur each day, and over the course of a year, more than 100,000 of these injuries will result in some form of vision loss. The fact is, more than 90% of eye injuries can be prevented with the use of appropriate safety eyewear.

Protection must be utilized where there is potential for injury to the eyes or face from flying particles, molten metal, liquid chemicals, vapors or gases, potentially injurious light radiation or a combination of these. Eye and face protection is available for protection against a variety of hazards. The hazard must be identified prior to selecting the PPE to assure the employee will be properly protected. It is important that eyewear fit securely and be reasonably comfortable for the employee.

Side shields are required when there is an impact hazard from flying objects or a chemical splash hazard present. Safety glasses and goggles can protect against impact hazards. Safety glasses are made of special materials to provide the necessary protection. All eye and face protection must meet the requirements of the ANSI (American National Standards Institute) Standard Z87.1-1989, entitled “American National Standard Practice for Occupational and Educational Eye and Face Protection.”

Contact EHS for specific requirements regarding Laser Safety Eyewear.

If safety glasses are to be worn with hearing protection, they must be compatible. If ear muffs are worn, the temple piece of the glasses must not break the seal of the muff. Thin temple piece glasses must be selected to avoid compromising the noise reduction capabilities of the muff.

Prescription safety eyewear is available to those employees requiring it through the [EHS](#) site under “Prescription Safety Glasses Request.”

Limitations

Safety glasses decrease peripheral vision; they can be uncomfortable; and they can fog, get scratched or dirty and obstruct vision.

Proper Use

Protective eye and face wear should be adjusted to provide maximum protection to the areas being protected. Goggles can be worn over spectacles and can be vented or non-vented. Face shields are considered a secondary form of protection and must be used in combination with spectacles or goggles to offer the necessary splash protection to the eye.

Contact lens wearers should be aware that dirty and/or chemical environments may present additional hazards. Chemical vapors can penetrate the lens causing damage to the eye. Proper eye protection should always be utilized instead of, or in conjunction with contact lenses.

Inspection and Maintenance

Lenses of eye protectors must be kept clean. Continuous vision through dirty lenses can cause eye strain - often an excuse for not wearing the eye protection. Daily inspection and cleaning of eye protectors with soap and warm water, or with a cleaning solution and tissues, is recommended.

Pitted and scratched lenses can also be a source of reduced vision and compromised protection. Excessively pitted or scratched or otherwise damaged eye and face protection must be replaced.

HEAD PROTECTION

Selection

Head protection must be worn to protect the head from falling objects (impact and penetration), electrical hazards, and bump hazards. Protective headwear must comply with ANSI-Z89.1-1986, entitled “American National Standards for Personal Protection – Protective Headwear for Industrial Workers.” Hard hats must be labeled with the ANSI Certification. There are three classes of headwear addressed in the ANSI Standard:

Class A / Class G (General) helmets, in addition to impact and penetration resistance, provide electrical protection from low voltage conductors (they are proof tested to 2,200 volts).

Class B / Class E (Electrical) helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts).

Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Proper Use

The shell is the rigid part of the hat and the suspension is the inner portion that cradles the head. The suspension performs two functions. First it orients and keeps the helmet on the head. It is adjustable to maintain a snug and comfortable fit. The second and most important function of the suspension is to absorb and distribute the impact of a falling object. This is the reason for the space between the suspension and the shell.

The suspension system is attached to a headband that is adjustable in $\frac{1}{8}$ size increments so the wearer can ensure there is sufficient clearance between the shell and the headband. Hats should be worn according to the manufacturer’s instructions and never worn backwards or tilted towards the back of the head.

Accessories are available for head protection such as, hearing protection, faceshields, sweat bands, and winter liners. Always follow the manufacturer’s direction for proper usage of accessories.

Inspection and Maintenance

Inspect the shell and the suspension before each use. Look for cracks, chips, dents, or deterioration or any other signs that would indicate the need to replace the shell immediately. Look for cracks, tears or broken straps in the suspension and replace as necessary. Never mix suspensions and shells from different manufacturers.

Never apply paints or solvents to the helmet; it could damage the strength and dielectric properties. Protect from sunlight during storage. Use warm soap and water to clean the helmet as necessary.

Limitations

Brim that can block vision can be hot to wear, and deterioration is not always readily visible. Don't store your hard hat in the sun. Light can damage some hard hats.

FOOT PROTECTION

Selection

Foot protection is necessary when hazards exist that could result in impact and compression, electrical, conductive, or injury to any portion of the foot or toes. Any time there is a danger of falling or rolling objects, sharp objects, molten metal, hot surfaces, and foot protection should be worn. Foot protection must comply with the requirements of ANSI Z41-1991, "American National Standard for Personal Protection – Protective Footwear."

Departments can purchase protective footwear through Grainger on U-M Marketsite by using a shortcode. Other options for departments would be through employee reimbursement of appropriate footwear from retail operations. When selecting your safety shoes, each staff member should make sure that the shoes fit properly in order to ensure their comfort when worn. When shoes do not fit properly, workers will tend not to use them.

Special consideration should be given to the work environment where the footwear will be worn. Is a special sole necessary? What type chemicals or petroleum products are present? Is radiant heat a problem? Are metatarsal guards necessary?

Consult with the safety shoe vendor for advice on fit and for information concerning specific conditions. For example, if you expect to spend a lot of time outdoors in the winter, the vendor should be able to advise you on shoe styles that will provide the maximum warmth.

Proper Use

Follow the manufacturer's recommendations for proper shoe usage.

Inspection and Maintenance

Keep protective footwear clean and polished, they will last longer. Replace broken or frayed laces. Be attentive to the wear and tear on the entire shoe or boot.

Limitations

The greatest protection of the foot will be the area under the steel insert. Although the toes are most likely to need protection, other parts of the foot could also be impacted by heavy objects of sufficient force.

HAND PROTECTION

Selection

Hand protection is available to protect against cut/punctures, abrasions, thermal burns, vibration, chemical exposures, and electrical shock. There is a wide assortment of gloves available for protection against various hazardous situations. No single glove that will protect from all hazards. Selection of gloves must be based on the hazards that are present, the job task, work conditions, and the duration of use.

Gloves to be used to protect against the effects of chemical use should be selected based on each manufacturer's glove selection charts. Contact a glove manufacturer directly or EHS for additional assistance.

Do not assume that the protection offered by one manufacturer's glove will apply to all types of similar gloves. The protection of each glove is based on the manufacturing processes and glove thickness. Assure that the glove will provide adequate protection for the chemical to be encountered. If multiple chemical hazards exist, base the effectiveness of the glove on the chemical with the shortest breakthrough time.

Proper Use

Gloves should fit properly and provide the degree of dexterity that is needed for the task, especially when working around machinery, where there is the possibility of the glove being caught. Occasionally, people will have a skin sensitivity to wearing gloves, especially when wearing latex gloves. You can purchase gloves containing a powder, which helps to reduce sensitivity and may feel more comfortable. If this does not alleviate the problem, you probably need to try a different type of glove.

When putting gloves on, ensure that there are no tears, holes or split seams. If there is any damage, replace the gloves immediately. While wearing gloves, be aware of the possibility of degradation or permeation. Degradation means the glove is beginning to physically break down and may appear wrinkled, dimpled or cracked. Permeation refers to the ability of the chemical to pass through the glove material. This is more difficult to detect than the previous types of warning signs. This is why it is very important to utilize the glove selection guides that are provided by the manufacturer.

Do not leave the work area with gloves still on, especially when you are wearing gloves for protection from hazardous materials.

Do not eat, drink, or smoke while wearing gloves and don't contaminate yourself or anything outside the work area by keeping your gloves on after your work task is completed.

When gloves are worn to protect from hazardous materials or chemicals, they must be removed properly in order to prevent touching your bare skin with the contaminated glove. Follow these procedures for removal of one-time disposable gloves:

1. Pinch the glove only just below the wrist and pull it off slowly, allowing it to turn inside out as it is pulled off.
2. Use the inside of the first glove to grasp the second glove and pull off slowly, allowing the glove to turn inside out as you go.
3. Place the gloves in a sealed container or bag and handle the same as other hazardous waste in your area. Never re-use disposable gloves.
4. Wash your hands after having removed and disposed of the gloves.

Inspection & Maintenance

Inspect gloves before and after each use. If gloves are to be reused, follow the manufacturer's instructions for proper decontamination and storage. It is important to note the expected service life of the glove as well, to plan for expected disposal times.

Limitations

No gloves protect you from everything. Use the right gloves for the hazards expected. Gloves can wear out, get torn or damaged. Wearing gloves reduces dexterity, touch, and finger movement.

