CAL POLY

Personal Protective Equipment Guide

1.0 Purpose

The purpose of the Personal Protective Equipment (PPE) Guide is to provide the campus community with the necessary information to identify work situations that require the use of PPE, determine the proper selection and use of PPE, guidance in the selection of appropriate Personal Protective Equipment (PPE), and campus resources for obtaining PPE for employees. Personal Protective Equipment (PPE) includes all clothing and work accessories designed to protect employees from workplace hazards.

Protective equipment should not replace engineering, administrative, or procedural controls for safety; it should be used in conjunction with these controls. Employees must wear protective equipment as required and when instructed by a supervisor. PPE application should be based on risk assessment, which includes evaluation of the hazard(s) and the procedure used, in consultation with the supervisor or principal investigator (P.I.).

2.0 Responsibilities

The following persons / entities have responsibilities as delineated below for implementation of this procedure:

2.1 Risk Management, Office of Environmental Health and Safety

It is the responsibility of the Office of Environmental Health and safety to:

a) Maintain and update this Procedure as necessary.

b) Provide consultation to Deans, Directors, Chairpersons, coordinators, Principal Investigators, managers, and supervisors regarding program compliance. E.H.&S. can provide consultation on such issues as: hazard identification and evaluation; procedures for correcting unsafe conditions; systems for communicating with employees; employee training programs; compliance strategies; and record keeping.

2.2 Deans, Directors, Department Chairs, Department Heads

Please see the Cal Poly Injury and Illness Prevention Program, section 7.4 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Deans, Directors, Department Chairs, and Department Heads to:

a) Develop and maintain written departmental procedures as necessary and ensure that each supervisor adheres to adopted procedures.

b) Develop and implement an education and training program designed to instruct employees in safe work practices related to preventing injuries and illnesses from foot injury hazards.

c) Provide necessary safety equipment, including personal protective equipment designed to prevent foot injuries, to employees, at no cost to the employee.

2.3 Principal Investigators and Supervisors

Please see the Cal Poly Injury and Illness Prevention Program, section 7.6 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Principal Investigators and Supervisors to:

a) Develop workplace procedures to ensure effective compliance with this and other Safety Procedures.

b) Ensure that each employee adheres to adopted procedures.

c) Instruct employees in the recognition and avoidance of unsafe conditions. Ensure that newly hired, newly assigned or reassigned employees are properly trained in all safety procedures associated with their new duties.

2.4 Employees

Please see the Cal Poly Injury and Illness Prevention Program, section 7.7 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of all employees, including student employees, to:

a) Read and comply with procedures and guidelines provided by their supervisors.

b) Inform their supervisors of workplace hazards without fear of reprisal.

c) Attend established education and training sessions; understand and comply with all applicable safety requirements. Failure to comply with established safety rules may be reflected in performance evaluations and may lead to disciplinary action consistent with procedures described in respective collective bargaining contracts, where applicable.

d) Ask questions of their supervisors when there is concern about an unknown or potentially hazardous situation.

2.5 Campus Departments

(A) Campus departments are required by both OSHA to provide personal protective equipment when necessary to protect employees from workplace hazards.

(B) EH&S recommends campus departments decide on policies for purchasing appropriate personal protective equipment including intervals and conditions at which equipment will be replaced.

3.0 Arm and Hand Protection

Arms and hands are vulnerable to cuts, burns, bruises, electrical shock, chemical spills, and amputation.

(A) The following forms of hand protection should be available for employees, depending on their work assignments:

Glove Type:	Protects against:
Disposable exam gloves	Aqueous solutions of acids, alkali, salts, ketones
Rubber gloves	Wide variety of chemical applications
Nitrile gloves	Chlorinated solvents, oils, greases, acids, caustics, alcohols
Neoprene gloves	Alcohols, organic acids, alkalis hydraulic fluids, gasoline,
Leather gloves	Moderate heat, mechanical, abrasions, cool temperature
Non-asbestos heat-resistant gloves	Heat, high temperatures
Metal-mesh gloves for meat cutters	Cutting and slicing
Cotton gloves	Moderate resistance to heat and cold

(B) Always wear the appropriate hand and arm protection. The recommendations above are a general guide. Check manufacturer's glove guides for specific recommendations and applications.
(C) Double your hand protection by wearing multiple gloves when necessary (e.g., two pairs of disposable gloves for work involving biological hazards).
(D) For arm protection, wear a long-sleeved shirt, a laboratory coat, chemical-resistant sleeves, or gauntlet-length gloves.
(E) Follow these guidelines to ensure arm and hand safety.
- Inspect and test new gloves for defects.
- Always wash your hands before and after using gloves.
- Do not wear gloves near moving machinery; the gloves may become caught.

- Do not wear gloves with metal parts near electrical equipment.

IMPORTANT: Gloves are easily contaminated. Avoid touching surfaces such as telephones, doorknobs, etc. when wearing gloves. Take off gloves when you leave area of work.

4.0 Body Protection

Hazards that threaten the torso tend to threaten the entire body. A variety of protective clothing, including laboratory coats, long pants, rubber aprons, coveralls, and disposable body suits are appropriate for specific work conditions.

(A) Rubber, neoprene, and plastic clothing protect employees from most acids and chemical splashes,
(B) laboratory coats, coveralls, and disposable body suits protect employees and everyday clothing from contamination,
(C) welding aprons provide protection from sparks.
(D) Laboratory coats shall not be laundered at private residences or public laundry facilities.
(E) Any protective clothing that becomes contaminated with hazardous materials must be decontaminated prior to being laundered or discarded as hazardous waste.
(F) Launder reusable protective clothing separate from other clothing.

See the following link for the current contract pricing for laboratory coats and uniforms:
Mission Linen Contract and Pricing for Cal Poly

5.0 Ear and Hearing Protection

If you work in a high noise area, wear hearing protection. Most hearing protection devices have an assigned rating that indicates the amount of protection provided. Section 2.2 Hearing Protectors of the campus Hearing Conservation program states that:

(A) Workers must wear hearing protectors when:
- They are exposed to a sound level of 85 dBA or greater and have had a significant threshold shift in hearing.
- They are exposed to noise in excess of the limits set in Cal/OSHA Title 8, Section 5096.

(B) Depending on your level of exposure, you may choose from the following devices:
- Disposable earplugs
- Reusable earplugs
- Headband plugs
- Sealed earmuffs

(C) To avoid contamination, follow these guidelines when using earplugs.
- Wash your hands before inserting earplugs.
- Replace disposable earplugs after each use.
- Clean reusable earplugs after each use.

Consider: Earplugs may be better in hot, humid, or confined work areas. They may also be better for those who wear other PPE, such as safety glasses or hats. Earmuffs, on the other hand, may be better for employees who move in and out of noisy areas, because the muffs are easier to remove. Before resorting to hearing protection, attempt to control noise levels through engineering or operational changes.

6.0 Eye and Face Protection

Employees must wear protection if hazards exist that could cause eye or face injury. Eye and face protection should be used in conjunction with equipment guards, engineering controls, and safe practices.

Always wear adequate eye and face protection when performing tasks such as grinding, buffing, welding, chipping, cutting, or pouring chemicals. Safety glasses with side shields provide protection against impact and splashes, but safety goggles provide protection against impact, splashes, and hazardous atmospheres.

(A) If you wear prescription glasses, wear goggles or other safety protection over the glasses.
(B) Prescription safety glasses/googles may be purchased for employees requiring them under departmental guidelines for purchasing and replacement.
(C) Safety glasses with side shields provide primary protection to eyes and are four times as resistant as prescription glasses to impact injuries.
(D) Goggles protect against impacts, sparks, chemical splashes, dust, and irritating mist. Wear full goggles, not just safety glasses, when working with chemicals. Follow the guidelines stated in Sec 3.1 of the Chemical Hygiene Plan (CHP):

b. Eye and Face Protection (82): You must always wear appropriate eye protection whenever anyone (even someone else) is working with hazardous materials or processes in the laboratory. Appropriate eye protection means safety glasses or goggles rated for impact resistance (per ANSI Z87.1, Practice for Occupational and Educational Eye and Face Protection). When there is the potential for **hazardous liquid splash** or spill, chemical **goggles** are required under ANSI Z87.1

(E) Eyecup welding goggles with filter lenses give protection from glare and sparks.
(F) A welding helmet protects from flash burn due to welding, soldering, or brazing, but may not provide primary eye protection; safety glasses or goggles should be worn with the helmet.
(G) A face shield is designed to protect the face from some splashes or projectiles but does not eliminate exposure to vapors. A face shield should be worn with goggles or safety glasses.
(H) Sunglasses are useful to prevent eyestrain from glare and to minimize ultraviolet light exposure.
(I) Sunglasses are **not** appropriate eye protection for welding.

7.0 Head Protection

Accidents that cause head injuries are difficult to anticipate or control. If hazards exist that could cause head injury, employees should try to eliminate the hazards, but they should also wear head protection. Safety hats protect the head from impact, penetration, and electrical shock. Head protection is necessary if you work where there is a risk of injury from moving, falling, or flying objects or if you work near high-voltage equipment.

(A) Hard hats should be water resistant, flame resistant, and adjustable. Wear one of the following hard hats as appropriate for your work situation.
(B) Wear the appropriate hard hat for the hazards in your work environment. 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

(C) Hard hats must have a hard outer shell and a shock-absorbing lining that incorporates a headband and straps that suspend the shell from 1 to 1 1/4 inches (2.54 cm to 3.18 cm) away from the head. This type of design provides shock absorption during an impact and ventilation during normal wear.
(D) Protective headgear must meet American National Standards Institute (ANSI)/International Safety Equipment Association (ISEA) Z89.1-2009 or provide an equivalent level of protection. Helmets purchased before 2009 must comply with the earlier ANSI Standard (Z89.1-1997 or Z89.1-2003) or provide equivalent protection.
(E) Follow these guidelines for head safety:

- Check the shell and suspension of your headwear for damage before each use. Look for cracks, dents, gouges, chalky appearance, and torn or broken suspension threads. Discard damaged hats or replace broken parts with replacements from the original manufacturer.
- Discard any hat that has been struck or dropped from a great height, even if there is no apparent damage.
- Do not wear a hard hat backwards, unless this is necessary to accommodate other protective equipment (e.g., welders face shield).
- Do not paint the plastic shell of a hard hat or alter it in any way.

8.0 Respiratory Protection

When airborne contaminants cannot be adequately controlled by fume hoods and ventilation, then respiratory protection may be needed. The use of respiratory protection has very stringent regulatory requirements. For this reason, Cal Poly has a Respiratory Protection Program to meet the requirements and provide the necessary training and documentation.

(A) Please refer to the Cal Poly Campus Respiratory Protection Program at:
http://afd.calpoly.edu/ehs/docs/RespiratoryProtection.pdf

For additional information/questions contact Tim Hastings, EH&S at 756-6651.

9.0 Footwear

Appropriate foot protection should be worn by all employees exposed to potential hazards to their feet. Employees who face possible foot or leg injuries from falling or rolling objects, or from crushing, or penetrating materials should wear protective footwear. Employees whose work involves exposure to hot substances or corrosive or poisonous materials must have protective gear to cover exposed body parts, including legs and feet. If an employee's feet may be exposed to electrical hazards, non-conductive footwear should be worn. Workplace exposure to static electricity may necessitate the use of conductive footwear.

A) Footwear which is defective or inappropriate to the extent that its ordinary use creates the possibility of foot injuries shall not be worn.

B) Safety-toe footwear shall meet the requirements and specifications of American National Standards Institute (ANSI) standard Z41-1999, "Personal Protection - Protective Footwear" and/or ASTM F2413-11.

C) Employees in the following classifications shall wear safety-toe footwear at all times while performing work for the University. Any exceptions shall be approved by the employee's supervisor (e.g. attendance at an all-day meeting or training session not requiring protective footwear):

Air Conditioning/Refrigeration Mechanic
Building Maintenance Worker
Building Service Engineer
Carpenter (all classifications)
Custodian (all classifications)
Electrician (all classifications)
Equipment Maintenance Technician
Facilities Control Specialist
Facilities Maintenance Mechanic
Facilities Worker (all classifications)
Instructional Support Assistant II
Laborer
Metal Worker II
Painters (all)
Plumber (all classifications)

D) Employees in the following classifications are responsible to wear safety-toe footwear in all appropriate situations (i.e. when using a steel bladed edger or when there is danger of a crushing injury to the foot):

Groundsworker (all classifications)
Heavy Construction Equipment Operator
Irrigation Specialist
Light Automotive Equipment Operators
Pest Control and Spray Specialist

Please refer to the EH&S website for resources and guidelines on procuring personal protective equipment including vendors and current university contracts/pricing.

Campus safety guidelines are prepared by Cal Poly Environmental Health & Safety. Questions should be directed to David Ragsdale at 756-6662 or e-mailed to dragsdal@calpoly.edu.