

# **PERSONAL PROTECTIVE EQUIPMENT**

## **FOR CALIFORNIA STATE UNIVERSITY, LOS ANGELES**

**OCTOBER 2007**

### **PROGRAM APPROVAL AND AUTHORIZATION**

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Date

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## **1.0. PURPOSE**

This program establishes the University's policy for the use, care, and maintenance of Personal Protective Equipment (PPE). Protective equipment must be provided, used and maintained in a sanitary and reliable condition. PPE refers to any article or item worn by personnel as protective devices, for eye, face, head and extremity protection.

## **2.0. SCOPE**

All employees and outside contractors associated with the University are required to adhere to the guidelines as set forth in these procedures. Whenever the scope of work has the potential for causing injury or death to a person, that person or persons will be issued and required to wear the appropriate PPE for the duration of the relevant work.

## **3.0. REFERENCE**

California Code of Regulations, Title 8, Section 3380 Personal Protective Devices

California Code of Regulations, Title 8, Section 3381 Head Protection

California Code of Regulations, Title 8, Section 3382 Eye and Face Protection

California Code of Regulations, Title 8, Section 3383 Body Protection

California Code of Regulations, Title 8, Section 3384 Head Protection

California Code of Regulations, Title 8, Section 3385 Foot Protection

California Code of Regulations, Title 8, Section 142.3 Labor Code. Protection from Electrical Shock

California Code of Regulations, Title 8, Section 3400 Medical Services and First Aid

California Code of Regulations, Title 8 Section 5144 Respiratory Protection Equipment

American National Standards Institute. Z89.1 - 1997 Head Protection Equipment Standards

American National Standards Institute. Z87.1 - 1989 Eye and Face Equipment Standards

American National Standards Institute. A10.14 - 1991 Fall Protection Devices

American National Standards Institute. Z359.1 - 1992 Harnesses and Lanyards

American National Standards Institute. A10.14 - 1991 General Guidelines for Fall Protective Devices

American National Standards Institute. A14.3 Ladder Safety Systems Equipment Standard

American National Standards Institute. Z41 - 1991 Foot Protection Equipment Standard

#### **4.0. DEFINITIONS**

**Personal Protective Equipment** – Items to be worn that are designed to protect a portion of the body from exposure to extreme or injurious light rays, heat, dust, falls, fumes, chemicals, cuts, noise, or falling objects.

**Engineering controls** – Measures that are implemented to reduce or eliminate the hazards posed by extreme or injurious light rays, heat, dust, falls, fumes, chemicals, cuts, noise, or falling objects.

**Protection** – The appropriate safeguarding obtained by means of safety devices and safeguards of the proper type intended to eliminate, preclude or mitigate the hazard.

**Entangled** – Refers to hand protection (i.e. gloves or clothing) being caught and pulled into the danger zone of machinery/equipment.

#### **5.0. RESPONSIBILITIES**

##### **5.1. Management shall:**

- 5.1.1.** Assure that the employee is instructed and uses protective equipment in accordance with the manufacturer's instructions.
- 5.1.2.** Assure that employee-owned personal protective equipment complies with standards and regulations prescribed by Risk Management and Environmental, Health & Safety (RM/EHS) Office. The employer shall assure this equipment is maintained in a safe sanitary condition.
- 5.1.3.** Provide personal protective equipment required for an employee's job assignment.
- 5.1.4.** Ensure that safety devices or safeguards, which may include personal protective equipment, are acceptable as to proper type, design, strength, quality and at least equivalent to the standards approved by the American National Standards Institute (ANSI).

##### **5.2. Employees shall:**

- 5.2.1.** Inspect all personal protective equipment (PPE) for proper fit and serviceability.

**5.2.2.** Insure that the PPE assigned to and used by them is maintained in a ready for use and sanitary condition at all times.

**5.3. Faculty shall:**

**5.3.1.** Insure that personal protective equipment (PPE), safety devices and safeguards are in place in their classroom and/or laboratory space and that the PPE is maintained in a sanitary condition at all times.

**5.3.2.** Insure that student personnel are trained in the proper use of personal protective equipment, safety devices and safeguards.

**5.3.3.** Insure that student personnel utilize the appropriate PPE during class activity.

**5.4. Contractors shall:**

**5.4.1.** Provide their personnel with the necessary personal protective equipment to safely perform the assigned task.

**5.4.2.** Insure that personnel are trained in the use of PPE.

**5.4.3.** Insure that all PPE is in good condition and is properly maintained.

**5.5. Risk Management and Environmental, Health & Safety (RM/EHS) Office shall:**

**5.5.1.** Review all submittals for use of personal protective equipment for adequacy and recommend suppliers or distributors of such material.

**5.5.2.** Periodically review University operations to ensure the proper use of personal protective equipment by employees.

**6.0. HEAD PROTECTION**

**6.1.** Employees exposed to flying objects during tree trimming and/or electric work where the possibility of shock and burns exists (600 volts or less), shall be safeguarded by means of approved head protection. This equipment will comply with ANSI Z89.1 – 1997, Class C, E and G, Protective Headwear for Industrial Workers.

**6.2.** For exposure to high voltage electrical shock (above 600 volts) and burns, helmets shall comply with ANSI Z89.2 – 1971, Safety Requirements for Industrial Protective Helmets for Electrical Workers, Class “G.”

- 6.3. Where there is a risk of injury from hair entanglement in moving parts of machinery, combustibles or toxic contaminants, employees shall confine their hair to eliminate the hazard.
- 6.4. Where there is a hazard posed by elevated work, personnel on the ground shall be protected with approved hard hats or head protection. A zone of control shall be established to require that head protection is required beyond a certain point, and this shall be clearly marked.

**7.0. EYE AND FACE PROTECTION**

Employees working in locations where there is a risk of receiving eye injuries, such as punctures, abrasions, contusions, or burns as a result of contact with flying particles, hazardous substances, projections or injuries from light rays that are inherent in the work or environment shall be safeguarded by means of face and/or eye protection.

Protection from Radiant Energy – In the selection of shade numbers for welding filters, Table PPE-1 shall be used as a guide for the selection of the proper shade numbers for filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual's needs.

**Table PPE-1**

**FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST RADIANT ENERGY**

<b>Welding Operation</b>	<b>Shade Number:</b>
Shielded metal-arc welding 1 1/6-, 3/32-, 1/8, 5/32 - inch diameter electrodes .....	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes .....	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes .....	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4- inch diameter electrodes .....	12
5/16-, 3/8-inch diameter electrodes.....	14
Atomic hydrogen welding.....	10 – 14
Carbon-arc welding.....	14
Soldering.....	2
Torch brazing.....	3 or 4
Light cutting, up to 1 inch.....	3 or 4
Medium cutting, 1 inch to 6 inches.....	4 or 5
Heavy cutting, over 6 inches.....	5 or 6
Gas welding (light), up to 1/8 – inch .....	4 or 5
Gas welding (medium), 1/8-inch to 1 / 2-inch.....	5 or 6
Gas welding (heavy), over 1 / 2-inch.....	6 or 8

**NOTE:** The wearing of contact lens is prohibited in working environments having harmful exposure to materials or light flashes, except when special procedures, which are medically approved, have been established for the protection of the exposed employee.

- 7.1. Eye and face protection PPE will meet ANSI Z87.1 – 1989 Practice for Occupational and Educational Eye and Face Protection.
- 7.2. Side shield protection shall be used whenever the hazard of flying objects is angular as well as frontal.
- 7.3. Laser Protection - Employees and students whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table PPE-2 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8.

**Table PPE-2**

SELECTING LASER SAFETY GLASS
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Intensity	Attenuation	
CW maximum power density (watts / cm <sup>2</sup> )	Optical density (O.D.)	Attenuation factor
10 <sup>-2</sup>	5	10 <sup>5</sup>
10 <sup>-1</sup>	6	10 <sup>6</sup>
1.0	7	10 <sup>7</sup>
10.0	8	10 <sup>8</sup>

Output levels falling between lines in this table shall require the higher optical density.

All protective goggles shall bear a label identifying the following data:

- the laser wavelengths for which use is intended;
- the optical density of those wavelengths; and
- the visible light transmission.

**8.0. BODY PROTECTION**

Body protection shall be required for employees whose work exposes parts of their body, not otherwise protected, to the hazards of flying debris, fumes, splashes, or penetrating materials.

- 8.1. Clothing appropriate for the work being done shall be worn. Loose sleeves, ties, lapels, cuffs, or other loose clothing that can become entangled in moving machinery shall not be worn.
- 8.2. Clothing saturated or impregnated with flammable liquids, corrosive substances, irritants or oxidizing agents shall be removed and shall not be worn until properly cleaned. If clothing is of a disposable type (tyvek), dispose of immediately and replace with a new garment. Never reuse disposable clothing.
- 8.3. When the hazard of splash exists with a hazardous chemical substance, all exposed skin (arms, legs and torso) shall be adequately protected from the materials present.

## **9.0. HAND PROTECTION**

Hand protection shall be required for employees and students whose work involves unusual and excessive exposure of hands to cuts, burns, harmful physical or chemical agents, or radioactive materials which are encountered and capable of causing injury or impairments.

- 9.1. Hand protection, such as gloves, shall not be worn where there is a risk of the hand protection becoming entangled in moving machinery or other hazardous equipment.
- 9.2. The selection of hand protection shall adequately address the hazard(s) posed. In cases where a chemical substance is the material being protected against, the glove-type shall provide the maximum duration of protection allowable.

## **10.0. FOOT PROTECTION**

Appropriate foot protection shall be required for employees who are exposed to foot injuries from electrical hazards, hot work, corrosive or poisonous substances, falling objects, crushing or penetrating action, which may cause injuries or who are required to work in abnormally wet locations. Safety-toe footwear shall meet the requirements of ANSI Z41.1 - 1991 Men's Safety-toe Footwear standard.

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

## **11.0. MEDICAL SERVICES AND FIRST AID**

- 11.1. The University shall ensure the ready availability of medical personnel for advice and consultation on matters of occupational health or injury. This shall be accomplished through the staffing of fully qualified Public Safety personnel trained and certified in first aid and CPR. The Student Health

Center (SHC) on campus shall also offer first aid treatment to employees during normal business hours of the center.

**11.2.** Where individual areas/departments have decided to provide medical first aid kits to employees, they shall be responsible for that kit's serviceability. A frequent inspection shall be made of all first-aid materials, and replenished as necessary.

**11.3.** Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

## **12.0. RESPIRATORY PROTECTION**

In the control of those occupational diseases caused by breathing air contaminated with harmful dust, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary protective control measure shall be to prevent atmospheric contamination at its source. This shall be accomplished as far as feasible by accepted engineering control measures. When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to University guidelines.

## **13.0. ENGINEERING CONTROLS**

The preferred method of addressing potentially hazardous conditions is to implement the necessary control(s) that will reduce or eliminate the hazard from originating. The RM/EHS Office shall be consulted whenever an engineering control is being considered in the course of mitigating a potentially hazardous condition or exposure.