Personal Protective Equipment

Potential Hazard Review

- Check the Safe Work Practice (SWP) for the task you are performing. Each SWP lists the hazard for that task.

Related Safe Work Practices

- Hazardous Substances
- Hearing Conservation

Authority

- CCR Title 8 Section 1514, 3380-3385, 5144

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RPD is required to protect employees from workplace hazards that can cause injury. Personal Protective Equipment (PPE) should be a control of last resort. Controlling a hazard at its source is the best way to protect employees. It is preferable (and required by Cal-OSHA) to "engineer out" the problem first through product substitution, equipment upgrades, etc. before implementing administrative controls (e.g. personnel rotation).

When engineering and administrative controls are not enough, then RPD must provide PPE (e.g. gloves, hard hats, etc.) and ensure proper use.

This Safe Work Practice (SWP) is dedicated to helping you avoid an injury or illness from known hazards. You are advised to follow these recommendations, read and follow this SWP and any related SWPs, complete and required or recommended training, and to obtain advice from a Qualified Person if you have any questions.

A Qualified Person is a person **designated** by the employer; and by reason of **training**, experience, or instruction who has demonstrated the ability to perform safely all assigned duties; and, when required is properly licensed in accordance with federal, state, or local laws and regulations.

All tasks require that you:

1. Use equipment in accordance with the guidelines set forth by the manufacturer. This includes following all signs and labels, and reviewing any manufacturer's operating manuals. If the instructions provided in the operating manual conflict with this SWP, then follow the instructions in the manual. The manufacturer's instructions prevail over this SWP.

2. Review the safety data sheets (SDSs) for each chemical.

3. Have completed required training, training on this SWP and those listed above as related. Training on SWPs must be completed before initial assignment. It is also recommended that you complete refresher training every two years.

Hearing protective devices are not covered under this SWP. See the Hearing Conservation SWP.

This safe work practice is organized into the following areas:

1. General recommendations

2. Respiratory protection

3. PPE Options Chart

General recommendations

1. Supervisors must provide PPE as required by Safe Work Practices, manufacturer's instructions, and regulation.
   a. If it is the end of the fiscal year and you have depleted your funding, contact Purchasing for help in obtaining PPE. Lack of funding is not an acceptable reason for not providing adequate PPE.

2. Specific training is required prior to use of PPE.
   a. Employees using PPE shall be trained to know at least the following (this information should be available in the manufacturer's operating instructions):
      i. When PPE is necessary
      ii. What PPE is necessary
      iii. How to properly don, doff, adjust, and wear PPE
      iv. The limitations of the PPE
      v. The proper care, maintenance, useful life and disposal of the PPE
   b. Employees should be able to demonstrate an understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

c. If there is reason to believe that an employee who has already been trained does not have the understanding and skill required, then the employee should be retrained. Circumstances where retraining is required include, but are not limited to, situations where:
   i. Changes in the workplace render previous training obsolete
   ii. Changes in the types of PPE to be used render previous training obsolete
   iii. Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill

3. PPE may be obtained in several ways:
   a. From the Storeroom in the Maintenance Yard.
   b. From a safety supply vendor. Contact Purchasing for names of current vendors.

4. To determine what PPE to wear:
   a. Check the manufacturer's operating manual.
   b. Check the SWP for the task you are performing.
   c. If a SWP is not available, use the *PPE Options Chart* below to decide which PPE may be appropriate.
   d. Contact EHS for assistance if you have any questions about the correct PPE.

5. ANSI (American National Standards Institute) approved head protection shall be worn where employees are working in locations where there is a risk of receiving head injuries from flying or falling objects, and/or electric shock and burns.

6. ANSI approved face or eye protection shall be worn where employees are 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 injurious light rays which are inherent in the work or environment.
   a. If an employee must wear prescription glasses to correct vision, then the Department must provide:
      i. Safety glasses or goggles designed to fit over spectacles, or
      ii. Protective goggles with corrective lenses mounted behind the protective lenses, or
      iii. Safety glasses with suitable corrected lenses (prescription).
   b. Prescription safety eyewear can be purchased from any vendor who complies with City purchasing requirements. RPD's Purchasing department can help you with this.

7. Body protection shall be worn where employees are working in locations where there is a risk of receiving injury due to hazardous or flying substances or objects.
   a. Clothing appropriate for the work being done shall be worn.

b. Loose sleeves, tails, ties, lapels, cuffs, or other loose clothing which can be entangled in moving machinery shall not be worn.
c. Clothing saturated or impregnated with flammable liquids, corrosive substances, irritants or oxidizing agents shall be removed and shall not be worn until properly cleaned.

8. Hand protection shall be worn where employees are working in a location when the employee's hands are exposed to hazards such as those from skin absorption of harmful substances, cuts or lacerations, abrasions, punctures, chemical burns, thermal burns, radioactive materials, and harmful temperature extremes.
   a. Hand protection, such as gloves, shall not be worn where there is a danger of the hand protection becoming entangled in moving machinery or materials.

9. ANSI approved foot protection shall be worn where employees are working in a location when the employee's feet are exposed to foot injuries from electrical hazards, hot, corrosive, poisonous substances, falling objects, crushing or penetrating actions, which may cause injuries or who are required to work in abnormally wet locations.

10. If the PPE is not comfortable, you may be able to get another size or brand. It must be reasonably comfortable and shall not unduly encumber your movement.

11. Inspect your PPE before you use it to ensure it is not damaged in any way. If it is damaged, do not use it. Obtain new PPE before beginning the task.

12. If several different types of PPE are worn together (e.g. hearing muffs and hard hat), they must be compatible. If you are unsure, contact EHS.

13. All PPE should be maintained in a clean, sanitary and reliable condition.

14. Any damaged PPE should be discarded and replace with new PPE before beginning the next task.

Respiratory Protection

15. An employee should only be included in the Respiratory Protection Program (RPP) as a last resort (i.e. if Engineering or other controls have deemed to be insufficient).
   a. An employee may be included in a respiratory protection program if:
      i. They apply pesticides or chemicals.
      ii. The chemicals used are Cal-OSHA regulated chemicals (see EHS if unsure).
      iii. The employee experiences any exposure symptoms.
      iv. EHS recommends an employee be included in the program.

b. Employees shall not be permitted to wear a respirator if they have facial hair that comes into contact with the sealing surface of the facepiece of a tight-fitting respirator or that interferes with respirator valve function.
    i. Employees that are part of the RPP are expected to be clean shaven. A well trimmed mustache may be okay; a goatee is not.

16. If you believe you need to be included in the RPP complete a Respirator Use Request Form and return it EHS. Be sure to review and include the Safety Data Sheet(s) (SDS) for chemicals or materials to be controlled as the basis of your request, and to fully understand the tasks and situation for which you are requesting respiratory protection.

17. In response to a Respirator Use Request, an exposure assessment may be required or performed to evaluate the level of exposure to a specific chemical, and if respiratory protection is warranted prior to approval.

18. If respiratory protection is warranted, the employee must be evaluated by a medical professional to assure the employee is physically able wear a respirator. The medical evaluation may include a physical examination as well as a comprehensive medical questionnaire.
    a. Additional medical evaluations may be required if an employee reports signs or symptoms related to wearing a respirator, if EHS or a medical provider requests a medical evaluation, or if there is a change in the workplace (physical work effort, increases in protective clothing, temperature, etc.) which may substantially increase the physiological burden placed on an employee using a respirator.
    b. Once the medical evaluation is completed the health care provider will forward EHS a copy of the employee's respirator medical approval.

19. EHS will contact the supervisor to set up a training and fit testing appointment.
    a. Respirators and cartridges are selected on the basis of the respiratory hazard involved. EHS will select and recommend the respirator and cartridge to be used for a given hazard. Only recommended use is approved.
        i. If an emergency situation arises which is considered life threatening or for which the condition of the ambient air is unknown or may be hazardous to employee health, employees should call 911 for professional assistance.
    b. Each time an employee wears a respirator, he/she needs to perform positive and negative pressure respirator seal checks. This is done as follows:
        i. Positive pressure user seal check (Fig. 1): Place the palm of one hand over the exhalation port of the respirator and blow out gently. If the fit is good, the facepiece will inflate slightly and hold.

ii. Negative pressure user seal check (Fig. 2): Place the palms of both hands over the inhalation ports (where the cartridges are) and inhale gently. If the fit is good, the facepiece will collapse inward slightly and hold. Fig. 2.

Fig. 1

Fig. 2

c. A good fitting respirator does not mean that it needs to be overly tight. Pulling straps too tight can actually distort the respirator and make the fit worse.

20. Respirator training, fit testing and a medical evaluation must be completed annually.

21. If employees detect any of these signs or symptoms particularly while wearing a respirator, they should leave the work area immediately:
    a. Chemical smell or taste.
    b. Difficulty or too much resistance in breathing.
    c. Dizziness, nausea, headache.

22. Always read the label on the cartridge to verify you are using one appropriate for your situation. Double cartridges (ones that include two or more filter types) are also available. Common colors and designations of cartridges/filters include:

Cartridge Color	Protection
Black	Organic vapors (such as solvents, paints, industrial cleaners, etc.
Magenta	Dust, fume, mists (ex. Asbestos, lead, metal fume, and various particulates)
White	Acid gases (ex. Sodium hypochlorite, sulfuric acid, nitric acid)
Yellow	Organic vapor and acid gas (when both are present)
Green	Ammonia/methylamine
P100 (Purple)	Particulates/aerosols with 99.97% filtering efficiency level, oil proof
N95	Particulates/aerosols with 95% filtering efficiency level – but NOT with oils
R95	Particulates/aerosols with 95% filtering efficiency level – resistant to oils

Remember, if you do not have approval for a specific cartridge use, then do not use it.

23. Respirators must be cleaned after every use with a non-alcohol based detergent/disinfectant.
    a. Use of wipes to clean respirators is acceptable but complete disassembly and sanitizing of the respirator (such as disassembly and submersion in a bucket of mild soap and water) should also be done.

b. Disposable respirators should be thrown out after every use.
c. Respirators should be stored in a plastic bag in an easily accessible area where they are free from sharp or crushing objects (such as tools, supplies, etc.).
d. Respirator cartridges should be stored separately in a dry plastic container.
e. P100 Respirator cartridges should be changed when wet, or breathing becomes difficult.
f. Chemical cartridges should be changed after 8 hours of use or when they become wet, breathing becomes difficult, or when the employee notes breakthrough properties (i.e. you can smell the chemical).

24. Inspect the following to ensure the respirator is properly functioning:
    a. Facepiece not cracked, torn, dirty, broken, missing clips, warped.
    b. Head straps not broken, mismatched, elastic frayed or ineffective.
    c. Inhalation/Exhalation valves in good shape, not torn, warped, dirty.
    d. Cartridges/Filters are appropriate for the type of contaminant, manufactured by the respirator maker, threaded properly.
    e. Storage and cleaning practices are adequate.
    f. Negative and positive pressure user seal checks completed before use.
    g. Times to change out cartridges established and known.

25. If the facepiece is not properly functioning, do not use the respirator until it has been repaired or replaced.

26. Voluntary Use of Respirators
    a. Disposable respirators (including paper “dust masks”) should only be used in situations where respirator use is not necessary to protect employee’s health but is voluntarily desired by the employee for “nuisance” situations (e.g. dust from using a leaf blower). They may also be used to protect from wildfire smoke (see the *Outdoor Environment* SWP).
    b. Medical clearance, fit testing or shaving is not required for voluntary use.
    c. Follow manufacturer’s recommendations for use and ensuring proper fit.
    d. Replace the disposable respirator at the beginning of each shift, or if when it gets damaged, deformed, dirty, or difficult to breathe through, whichever comes first.
    e. If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help.

C. PPE OPTIONS CHART

Personal Protective Equipment Options Chart (All PPE must be approved by the American National Standards Institute; ANSI, except for gloves)				
Nature of Hazard	**Typical Operation of Concern**	**Examples of Related Safe Work Practice(s)**	**PPE**	**Comments**
Impact from flying fragments, objects, large chips, particles, sand, etc. that are anticipated to be coming straight at the eye.	Chipping, grinding, drilling, chiseling, etc.	**Chippers & Grinders,**	**Safety glasses (always with permanently attached side shields)**	• Spectacles with shaded lenses are available for outdoor work. • Anti-fog coated lenses are also available.
Impact from flying fragments, objects, large chips, particles, sand, etc. when it is anticipated that a projectile may be coming from other than straight at the eye (i.e. from the sides)	Leaf blowing, sanding, etc.	**Leaf Blowing, Woodworking**	**Impact-resistant safety goggles.**	• Spectacles with shaded lenses are available for outdoor work. • Anti-fog coated lenses are also available.
Splashes or irritating mists	Use of chemicals, such as application of pesticides	**Hazardous Materials**	**Safety goggles**	• Impact-resistant safety goggles are also available (combines the best of a goggle with glasses). • Anti-fog coated lenses are also available.
Nuisance dust (general dusty conditions)	Dust from woodworking (sanding, buffing, etc.)	**Woodworking**	**Safety goggles**	• Improve dust pickup/exhaust at the source of generation also.
Nuisance dust (general dusty conditions)	Woodworking, cutting wood, brush removal, leaf blowing, dirt-moving operations	**Woodworking, Tree Work, Brush Removal, Housekeeping, Leaf Blowing, Chainsaws**	**Dust mask**	• When the dust is a hazardous substance or a substance that is causing a reaction which can not be sufficiently controlled by a dust mask, contact EHS for help in selecting a respirator.[1]
Severe exposures to impact from flying fragments, objects, large chips, particles, sand, etc.	Chipping, grinding, leaf blowing, drilling, chiseling, sanding, etc.	**Chippers & Grinders, Leaf Blowing, Woodworking**	**Face shields**	• Note that face shields are always worn OVER primary eye protection, NOT ALONE.
Severe exposures to splashes or irritating mists	Use of chemicals, such as application of pesticides	**Hazardous Materials**	**Safety goggles and face shields.**	
Optical radiation	Welding or hot work	**Hot Work (Welding)**	**Welding helmets/goggles**	• Specific lenses and shading are required for various welding activities.

[1] RPD industrial Investigation, EHS Case #3760, DOI 3/20/08

Personal Protective Equipment Options Chart (All PPE must be approved by the American National Standards Institute; ANSI, except for gloves)				
Nature of Hazard	**Typical Operation of Concern**	**Examples of Related Safe Work Practice(s)**	**PPE**	**Comments**
Falling objects from overhead	Construction, tree work, golf courses	**Tree Work**	**Head Protection (hard hats)**	• Use anytime there is a chance of being hit on the head from overhead falling objects. This includes golf balls when working on the golf courses. • There are special hardhats available for special jobs (e.g. voltage protection). See EHS for more information.
Falling objects onto feet, contact of feet with heavy machinery	Construction, tree work	**Tree Work**	**Foot protection**	• Details on provision of foot protection to RPD employees is determined by Union MOUs. For further information, see Human Resources or contact your union.
Impact with materials or tools which might cause scrapes, cuts, bruises, etc.	Grinding, sawing, sanding, material handling, brush dragging	**Animal Handling, Brush Removal, Woodworking**	**Hand protection (gloves)**	• Fabric gloves, such as leather and cotton • Also wear long sleeves.
Contact with materials which might irritate skin or come into contact with blood	Pouring, mixing, painting, emergency response (first-aid)	**Hazardous Materials, Infectious Materials**	**Hand protection (gloves)**	• Chemical Resistant Gloves (such as nitrile, latex gloves). Many different types exist. See EHS for help with glove selection.
Contact of hands with equipment or tool vibration	Jackhammer operations, concrete sawing, rototilling, hand mowing	**Concrete Sawing, Lifting, Body Mechanics & Ergonomics, Power Tools**	**Hand protection (gloves)**	• Anti-vibration gloves. Chase Ergonomics Decade Anti-vibration gloves, either full finger or half finger. See EHS for further help with selection.
Contact and entanglement of the hands	Machining	**Lathe**	**Hand protection (form fitting gloves)**	• Hand protection, such as gloves not fit for size, shall not be worn where there is danger of the hand protection becoming entangled in moving machinery or materials
Contact of hands and arms with extreme heat	Welding, roofing, kilning	**Hot Work (Welding,) Asphalt Roofing Operations**	**Hand/arm protection (gloves)**	• Aluminized gloves.
Contact of body with irritating dusts, chemicals, infectious materials or other potentially harmful agents	Pouring, mixing, painting, installation of fiberglass, pesticide application, emergency response (first-aid), cleaning out homeless encampments	**Infectious Materials**	**Body protection (coveralls)**	• Disposable coveralls, such as Tyvek. Fabric coveralls may be used in some instances, but require special handling/laundering. See EHS for further help with selection.

Personal Protective Equipment Options Chart (All PPE must be approved by the American National Standards Institute; ANSI, except for gloves)				
Nature of Hazard	**Typical Operation of Concern**	**Examples of Related Safe Work Practice(s)**	**PPE**	**Comments**
Contact of body with sharp or rough edges, or flying material	Cutting, grinding, sanding, sawing, material handling	**Woodworking**	**Body protection (coveralls)**	• Fabric coveralls
Working around vehicular traffic or other moving equipment	Controlling traffic, working around moving vehicles or equipment working in the morning or evening.	**Traffic Safety**	**High visibility clothing**	• Reflective vests or other clothing. • Could be Class I, II or III. The selection of the class is dependent upon specific conditions at the time of the need, and includes atmospheric conditions, sight/stop distances, proximity, etc. See the ANSI std. for more detail.
Kneeling on ground	Planting, construction	**Pavement Breaker**	**Knee pads**	• Can use kneeling pad in lieu of knee pads.
Contact of body with extreme heat	Welding, roofing, kilning	**Hot Work (Welding)**	**Body protection (coveralls)**	• Welding chaps, aprons
Contact of legs with chain blades, or other sharp objects/materials	Using a chainsaw	**Chainsaws, Hedge Shears/Trimmers**	**Leg protection**	• Chaps.
Loud noise	Machining, chipping, grinding, pneumatic equipment, motors	**Chippers & Grinders, Machine Operation, Power Tools**	**Ear Protection**	• Can use either ear plugs or ear muffs.
Working outdoors; exposure to UV radiation (sun)	Planting, weeding, trenching, construction, tree work, supervising recreation activities	**Ultraviolet (UV) Radiation**	**Sunscreen**	
Working outdoors; exposure to mosquitoes or other insects	Planting, weeding, construction, tree work , supervising recreation activities	**Insect/Arachnid Bites and Stings, Animal and Pest Control**	**Insect Repellent**	• Use products with DEET, Picaridin or lemon eucalyptus oil • DEET concentration of 30% or less should be find for most situations.
Riding on mowers or moving equipment,	Mowers, operating equipment.	**Mower, Machine Operation**	**Air-ride suspension seat**	• Many seats can be replaced with seat that have some suspension. See the Auto Shop.

References:

1. American National Standard for High-Visibility Safety Apparel and Headwear; ANSI/ISEA 107-2010, January 8, 2010.

For any questions, please contact EHS at 415-831-2780.