

## **National Park Service Personal Protective Equipment Policy**

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Engineering controls shall be the primary methods used to eliminate or minimize hazard exposure in the workplace. When such controls are not practical or applicable, personal protective equipment (PPE) shall be employed to reduce or eliminate personnel exposure to hazards. Personal protective equipment will be provided, used and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injuries and/or illnesses.

### **Scope**

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The NPS provides all employees with required PPE to suit the task and known hazards. This program covers the requirements for PPE with the exception of PPE used for hearing conservation and respiratory protection or PPE required for hazardous material response to spills or releases, which are covered under separate programs. This program applies to all employees and volunteers of the National Park Service that use PPE in the course of their duties.

### **References**

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1. 29 CFR, Part 1910, OSHA General Industry Standards, Subpart I.
  - 1910.132, General Requirements
  - 1910.133, Eye and Face Protection
  - 1910.135, Head Protection
  - 1910.136, Occupational Foot Protection
  - 1910.137, Electrical Protective Equipment
  - 1910.138, Hand Protection
2. OSHA Publication 3151, Assessing the Need for Personal Protective Equipment
3. ANSI Z87.1-2003, Eye and Face Protection  
ANSI Z89.1-1997, Head Protection  
ANSI Z41-1991, Foot Protection  
ANSI 105-2000, Hand Protection Selection Criteria

### **Program Elements**

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1. *Design.* All personal protective equipment shall be of safe design and construction for the work to be performed. Only those items of protective clothing and equipment that meet National Institute of Occupational Safety and Health (NIOSH) or American National Standards Institute (ANSI) standards will be procured or accepted for use.

## 2. Hazard assessment and equipment selection.

Hazard analysis procedures shall be used to assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of PPE. If such hazards are present, or likely to be present, the following actions will be taken:

- Select, and have each affected employee use, the proper PPE.
- Communicate selection decisions to each affected employee.
- Select PPE that properly fits each affected employee.

## 3. Defective and damaged equipment.

Defective or damaged personal protective equipment shall not be used.

## 4. Training.

All employees who are required to use PPE shall be trained to know at least the following:

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, remove, adjust and wear PPE.
- The limitations of the PPE.
- The proper care, maintenance, useful life and disposal of the PPE.

Each affected employee shall demonstrate an understanding of the training and the ability to use PPE properly before being allowed to perform work requiring the use of PPE.

## **Personal Protective Equipment Program Implementation Action Items**

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Step 1  Assess the workplace to identify equipment, operations, chemicals and other workplace components that could harm your employees. This includes:

- Eye and face injury.
- Cuts, punctures and laceration.
- Foot and hand injury.
- Head impact.
- Chemical exposure.
- Air contamination.
- Excessive temperatures.

- Step 2 ☐ Implement engineering controls and work practices to control or eliminate these hazards to the extent feasible.
- Step 3 ☐ Select the appropriate types of PPE to protect your employees from hazards that cannot be eliminated or controlled through engineering controls and work practices.
- Step 4 ☐ Inform your employees why the PPE is necessary and when it must be worn. This includes:
- When PPE is necessary.
  - What PPE is necessary.
  - How to properly don, remove, adjust and wear PPE.
  - The limitations of the PPE.
- Step 5 ☐ Train your employees how to use, store and care for the selected PPE and how to recognize PPE deterioration and failure. This includes the proper care, maintenance, useful life and disposal of the PPE.
- Step 6 ☐ Identify how you will enforce proper PPE use.

## **Technical Appendices**

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Appendix A: Written Personal Protective Equipment Program Appendix B: PPE  
Certification of Hazard Assessment Appendix C: General Guidelines for Choosing  
Personal Protective Equipment

## **Appendix A: Written Personal Protective Equipment Program**

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### *Written Program Requirements*

A written Personal Protective Equipment (PPE) program must be prepared that covers all workplaces where employees use PPE. The written plan must describe how the program elements will be implemented at the park. It must be maintained at each work site. The written program must include the following:

1. Design.
2. Hazard assessment and equipment selection.
3. Defective and damaged equipment.
4. Training.

### Sample Personal Protective Equipment Program

Caution: Although such general guidance may be helpful, you must remember that the written program must reflect what you are doing in your workplace. Therefore, if you use a generic program, it must be adapted to address the facility it covers. For example, the written plan must list the PPE hazard assessments at the site, indicate who is to be responsible for the various aspects of the program in your facility and indicate where written materials will be made available to employees.

## **PERSONAL PROTECTIVE EQUIPMENT PROGRAM**

Your National Park

### **I. PURPOSE**

Personal protective equipment (PPE or equipment, herein) includes all clothing and other equipment designed to create a barrier against workplace hazards. PPE should not be used as a substitute for safety-oriented engineering, guards, work practices and/or administrative controls, but should be used in conjunction with these controls to provide for employee safety and health in the workplace. The basic element of any management program for PPE should be an in-depth evaluation of the equipment needed to protect against all hazards in the work site.

Proper use of PPE requires hazard awareness training by the user. Employees must be aware that the PPE does not eliminate the hazard. Additionally, if the equipment fails, exposure may occur. To reduce the possibility of failure, PPE must be properly fitted and maintained in a clean and serviceable condition.

Selection of the proper PPE for a job is important. Park management and employees must understand the equipment's purpose and its limitations. The equipment must not be altered or removed even though an employee may find it uncomfortable simply because it does not fit properly.

This program will address head, eye and face, torso, and foot and leg protection. Separate programs exist for respiratory, fall and hearing protection. For more information on these programs, refer to the policies for Respiratory, Fall Protection and Noise Exposure Programs.

#### **A. Policy**

It is the policy of the park to provide, without cost to the employee, required and approved personal protective equipment to protect park employees from occupational hazards. PPE must be available to employees when it is needed, and it must be properly fitted. Supervisors must survey and document all operations and, using the health and safety hazard analysis process, evaluate and identify types of PPE required to minimize risk to their employees. Only approved equipment will be used.

**It is the supervisor's responsibility to ensure that PPE is appropriate for the assigned duties, that it is worn, and that it meets the appropriate standards.**

Employees will be trained in how to properly select, inspect, use, maintain, store and dispose of PPE. Supervisors shall routinely evaluate employees on their performance of these tasks.

*B. Scope and Applicability*

This program applies to all park activities involving employees and volunteers. It is the goal of this program to identify and provide appropriate PPE for all jobs or tasks within the park.

## **II. OBJECTIVES**

The primary goal of the Personal Protective Equipment Policy is to ensure that park personnel are adequately protected from hazards associated with tasks that require the proper use of PPE. In order to achieve this goal, the following is required:

- Identification of all operations requiring the use of PPE.
- Use of approved PPE at appropriate times.
- Development and implementation of viable procedures for selection, issuance, use, maintenance and storage of PPE.

## **III. PROCESS/PROGRAM**

*A. Controlling Hazards*

PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls and sound manufacturing practices.

*B. Assessment and Selection*

It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational or educational operation or process. Protective devices should then be matched to the particular hazard. OSHA requires employers to conduct inspections of all workplaces to determine the need for personal protective equipment and to help in its selection.

For each work site, a certificate must be completed (Appendix B) that lists the findings of the inspection and specific protective equipment needed. These duties will be distributed between the First Line Supervisors (FLS) in accordance with the park's Workplace Review and Health and Safety Hazard Analysis Policies, as well as industry standards and best work practices.

### C. Assessment Guidelines

In order to assess the need for PPE, the following steps should be taken:

#### 1. *Survey*

Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

- Impact.
- Penetration.
- Compression (roll-over).
- Chemical.
- Heat.
- Harmful dust.
- Light (optical) radiation.

#### 2. *Sources*

During the walk-through survey, the FLS should observe:

- Sources of motion (i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects).
- Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.
- Types of chemical exposures.
- Sources of harmful dust.
- Sources of light radiation (i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.).
- Sources of falling objects or potential for dropping objects.
- Sources of sharp objects, which might pierce the feet or cut the hands.
- Sources of rolling or pinching objects, which could crush the feet.
- Layout of workplace and location of co-workers.

- Any electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas.

### 3. *Organize data*

Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. Once the hazards of a workplace have been identified, the Safety Office and FLS will determine the suitability of PPE available. They will make recommendations for additional equipment and specify the minimum requirements for PPE to ensure a level of protection greater than the minimum required for employee protection. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

### 4. *Analyze data*

Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards should be reviewed and a determination made as to the type, level of risk and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

First Line Supervisors, in conjunction with their employees, will select specific types of required equipment that meet the requirements. The FLS will be responsible for evaluating the use of PPE in the workplace and make changes as needed to ensure all PPE is appropriately used.

## D. Equipment Selection Guidelines

The general procedure for selection of protective equipment is to:

1. Become familiar with the potential hazards, the type of protective equipment that is available and what the equipment can do (i.e., splash protection, impact protection, etc.).
2. Compare the hazards associated with the environment (i.e., impact velocities, masses, projectile shape, radiation intensities) with the capabilities of the available protective equipment.
3. Select the equipment that ensures a level of protection greater than the minimum required to protect employees from the hazards.

4. Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end-users be made aware of all warning labels for, and limitations of, their PPE.

#### *E. Fitting the Device*

Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.

#### *F. Devices with Adjustable Features*

Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care should be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that they will not fall off during work operations. In some cases, a chin strap may be necessary to keep the helmet on an employee's head. (Chin straps should break at a reasonably low force, however, so as to prevent a strangulation hazard). Where manufacturer's instructions are available, they should be followed carefully.

#### *G. Reassessment of Hazards*

It is the responsibility of the FLS to reassess the workplace hazard situation as necessary by identifying and evaluating new equipment and processes, reviewing accident records and re-evaluating the suitability of previously selected PPE.

#### *H. Requirements From the Construction Standards (1926.28)*

The park is responsible for requiring employees to wear appropriate PPE in all operations where there is an exposure to hazardous conditions, or where it is indicated by this part, that using such equipment is needed to reduce hazards.

#### *I. Protective Devices*

All PPE will be of safe design, constructed for the work to be performed and maintained in a sanitary and ready-to-use condition. Only items that meet National Institute of Occupational Safety and Health (NIOSH) and American National Standards Institute (ANSI) standards will be procured and accepted for use. Selection of new PPE will conform to the most recent NIOSH and/or ANSI standards (see References for a list of applicable standards).

Careful consideration will be given to comfort and fit of PPE in order to increase its use. Protective devices are generally available in a variety of sizes, and care should be taken to select the correct size.

## 1. *Head Protection*

Head protection is required when there is a possibility of head injuries from a falling or flying object, by bumping the head against a fixed object or from exposed electrical connections (electrical shock). See Appendix C for details about head protection.

There are two types and three classes of head protection. Type 1 helmets are full brim, which is not less than 1-½ inches wide, and provide protection from impact to the top of the head. Type 2 helmets are brimless, with a peak extending forward from the crown, and provide protection from side and top impact.

Bump caps do not protect against impact or blows to the top or the sides of the head.

The three classes of helmets are as follows: Class G – General: designed for general purpose with 2,200-voltage protection, providing protection against impact hazards. Class E – Electrical: designed for utility workers, providing protection from impact and penetration by falling or flying objects and up to 20,000 volts of electricity. Class C – Conductive: designed for general purposes, but provide no voltage protection, are lightweight and provide impact protection.

The fitting of head protectors is very important. Headbands are adjustable and should be fitted to provide a minimum of 1-½ inches of clearance between the shell and the headband. During operations that involve climbing or search-and-rescue events, a chin strap must be worn to keep the head protector in place. Manufacturer's recommendations should be followed in cleaning shells and components. Certain paints and thinners may damage or reduce the protective features of the hat. They should not be painted or have holes drilled in them for any reason. Decals should not be placed on hard hats (except for the small NPS emblem), as they could cover over possible areas of damage.

Employees are responsible for visually inspecting all of the components for any sign of dents, cracks, penetration or damage that might reduce the degree of safety originally intended.

## 2. *Eye and Face Protection*

Eye injury prevention requires that all persons who are in areas where eye injuries might occur wear protective eyewear. Suitable protectors shall be used when employees are exposed to hazard from flying particles, acids or caustics, molten metal, chemical liquids, gases, vapors, bio-aerosols or injurious light radiation. See Appendix C for details about eye and face protection.

Pesticide applicators shall wear chemical splash goggles or a full face shield while mixing and/or applying any liquid pesticide.

Supervisors shall determine if there is a need for face shield protection to be used by tree trimmers or staff who operate brush chippers to prevent or reduce safety hazards directed at the employee's face.

Over-the-glasses goggles or safety glasses shall be provided to employees who wear eyeglasses and work in conditions that may be hazardous to the eye. At the discretion of the supervisor, prescription safety glasses or goggles that incorporate corrective lenses may be purchased for park employees who work in hazardous areas that require protective glasses. Prescription safety glasses are preferable to goggles or over-the-glasses safety glasses, since they are more comfortable.

If prescription lenses are required, the lens prescription must be furnished at the employee's expense, but the park will pay a portion of the cost for the frames, lenses and fitting. If the employee wishes to purchase safety glasses that are in excess of the allotment, that employee will have to pay the difference.

This policy should be reviewed annually to verify that the allotment is sufficient to purchase safety eyeglasses.

### 3. Torso Protection

Torso protection is required where there is a risk of injury from heat, splashes from hazardous liquids, impact, cuts, acids and radiation. Types of protection include vests, coveralls, jackets, aprons and full-body suits. Night workers, traffic control personnel and maintenance crews who might be struck by moving vehicles (day or night) must wear suits or vests designed to increase visibility and reflect light. See Appendix C for details about full body protection.

The employee, to ensure proper fit and function, must routinely inspect any torso protection.

Different types of materials are used for torso protection. Specific examples of materials and their benefits and use are:

- Wool and specially treated cotton are fire-resistant, comfortable and adaptable to changing workplace temperatures.
- Duck, a closely woven cotton fabric, is good for light-duty protective clothing. It can protect against cuts and bruises on jobs where employees handle heavy, sharp or rough materials.
- Heat-resistant clothing, such as leather, guards against dry heat and flame.
- Rubber and rubberized fabrics, neoprene and plastics protect against some acids and chemicals.

- Disposable suits of paper-like material protect against dusty materials or materials that can splash.
- Completely enclosed suits protect from extremely toxic materials.
- Limited-use suits made of materials such as polyethylene and saranex for protection from bio-hazards, certain low-toxic pesticides, poison oak and some hazardous materials.

#### 4. *Foot and Leg Protection*

Foot and leg protection is required when there is a risk of injury from falling, rolling or sharp objects; molten metal; hot surfaces; and wet slippery surfaces. This policy recognizes that the park will provide protective footwear to employees who work in jobs in which protective footwear is required and ensure that it is worn.

Types of protection include safety shoes, boots, leggings and chaps. Features that may be obtained in a shoe or boot include heat-resistant soles, metal insoles, steel shanks and arch and metatarsal protection. See Appendix C for details about foot and leg protection.

Rubber boots purchased for pesticide applications shall be marked on the inside with the following: "Caution – contaminated with pesticides – these boots shall only be used for pesticide mixing and application."

OSHA defers to the American National Standards Institute (ANSI) for determining what constitutes "protective footwear" defined in ANSI Z41-1991,

American National Standard for the Personal Protection Protective Footwear. The standard outlines requirements for performance measurements for impact and compression protection for the toes, metatarsal and sole; and protection against electrical, conductive and puncture hazards.

The ANSI standard does not allow for add-on type devices (such as strap-on foot, toe or metatarsal guards) as a substitute for protective footwear. According to part 4.1.1 of the standard, "the toe box shall be incorporated into the footwear during the construction and shall be an integral part of the footwear." Add-on devices would be suitable only for visitors or employees who are visiting a workplace or assigned for short-term, temporary periods in areas where protective footwear is required.

The park will pay up to an allocated dollar amount for employees to purchase protective footwear. If employees wish to purchase safety footwear that is in excess of the allotment, the employees will have to pay the difference.

This policy should be reviewed annually to verify that the allotment is sufficient to purchase protective footwear.

Employees shall be counseled to care for their protective footwear as they should care for all government property, since protective footwear is purchased totally or partially with government funds.

It is the supervisor's responsibility to ensure that the protective footwear and leg wear is appropriate for the assigned duties and that it meets the appropriate standards.

## 5. Arm and Hand Protection

Whenever there is a risk of injury from burns, cuts, electrical shock, amputation and absorption of chemicals, workers are required to protect their hands and arms. Gloves that provide insulation from burns and cuts are usually made from wire mesh, leather or canvas. Electricians require special rubber gloves for protection from shocks and burns. Animal control technicians and others handling wildlife or other sick or injured animals have special gloving requirements also. The Materials Safety Data Sheet for each specific chemical may provide the type of glove required or the specifications should be reviewed for chemical compatibility. See Appendix C for details about hand and arm protection.

### ***Operating Record/Records Management***

The FLS will ensure that adequate workplace and task analyses have been performed that shall identify required PPE. In addition, the FLS will perform necessary training on all required PPE. Training will include PPE selection, use and care. The record shall include the names of the people trained, the type of training received, topics discussed and the dates that training occurred. The FLS shall maintain their employees' training records for at least three (3) years. The Safety Office will periodically review these records for accuracy and completeness.

## **IV. ROLES AND RESPONSIBILITIES**

### **Superintendent**

The Superintendent shall:

- Provide the necessary budget to procure the required PPE through the annual budget process.
- Ensure that supervisors are evaluated on PPE used in the workplace.

- Provide leadership to instill in supervisors and employees that doing a job right includes effective use of PPE.

### Safety Office

The Safety Office shall:

- Monitor to ensure employees have been instructed on selection, use, care and maintenance of PPE for their job or activity.
- Ensure that employees and FLS know that if the proper PPE is not available, the job is not to progress.
- Provide technical assistance to supervisors in developing hazard analyses and selection of PPE.
- Document workplace assessments.

### Supervisors

Supervisors shall:

- Develop hazard analyses for activities they are responsible for which specifically identify PPE requirements.
- Train employees on the selection, proper use, limitations and care of PPE.
- Evaluate and enforce required PPE use.
- Ensure that PPE is appropriate for the assigned duties and meets the appropriate standards.
- Ensure that wearing of prescribed PPE is in keeping with the intent of Uniform Program Guidelines.

### Employees

Employees shall:

- Use and care for required PPE properly.
- Notify their supervisor of any factors or practices that may require any changes relating to PPE.
- Be involved in the PPE selection.

## V. LEGAL REQUIREMENTS AND AUTHORITY

### OSHA

General requirements for PPE are outlined by the Occupational Safety and Health Administration (OSHA) in the Code of Federal Regulations (CFR) Title 29, Part 1910, Subpart I- Personal Protective Equipment. Section 1910.132- General Requirements, paragraph (a) states that, "Protective equipment, including personal protective equipment for the eyes, face, head and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used and maintained in a sanitary and reliable condition whenever it is necessary." In addition, the park is required to certify in writing that workplace hazard assessments have been performed.

In a Standard Interpretation Letter, dated October 18, 1994, OSHA addressed the issues relating to who is required to pay for such equipment. It states, "OSHA has interpreted its general PPE standard, as well as specific standards, to require employers to provide and pay for personal protective equipment required by the company for the worker to do his or her job safely and in compliance with OSHA standards."

### NPS Policy

Reference/Authority: RM 50B, National Park Service Occupational Safety and Health Program, requires parks to provide volunteers and employees protection from harmful substances in the workplace; 29 CFR 1910.160, Basic Program Elements for Federal Employee Occupational Safety and Health Programs, prescribes federal agency responsibility for adherence to occupational safety and health standards promulgated under OSHA; 29 CFR 1910.132-138, Personal Protective Equipment, prescribes the minimum requirements for a Personal Protective Equipment Program.

## VI. REFERENCES

1. 29 CFR, Part 1910, OSHA General Industry Standards, Subpart I.
  - 1910.132, General Requirements
  - 1910.133, Eye and Face Protection
  - 1910.135, Head Protection
  - 1910.136, Occupational Foot Protection
  - 1910.137, Electrical Protective Equipment
  - 1910.138, Hand Protection
2. OSHA Publication 3151, Assessing the Need for Personal Protective Equipment
3. ANSI Z87.1-2003, Eye and Face Protection  
ANSI Z89.1-1997, Head Protection  
ANSI Z41-1991, Foot Protection  
ANSI 105-2000, Hand Protection Selection Criteria

Approved:

\_\_\_\_\_  
Name, Superintendent

\_\_\_\_\_  
Date

**Appendix B: PPE Certification of Hazard Assessment**

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Work Area \_\_\_\_\_  
Assessment Conducted By \_\_\_\_\_ Date \_\_\_\_\_

***Personal Protective Equipment – Hazard Analysis – By Task***

<b>Task</b>	<b>Hazard</b>	<b>PPE</b>	<b>Notes</b>	<b>Departments</b>

PPE Certificate Example  
**PPE Certification of Hazard Assessment**

Work Area \_\_\_\_\_  
 Assessment Conducted By \_\_\_\_\_ Date \_\_\_\_\_

**Personal Protective Equipment - Hazard Analysis - By Task**

<i><b>Task</b></i>	<i><b>Hazard</b></i>	<i><b>PPE Required</b></i>	<i><b>Notes</b></i>	<i><b>Departments</b></i>
Entering high noise area	Hearing loss	Foam, cap or earmuff type hearing protection	Both ears, all production areas, prior to plant entry	All persons
Chemical mixing	Caustic burns	Chemical gloves, apron, goggles and face shield, rubber boots, sleeves	Only authorized employees are to mix chemicals	Authorized employees
Grinding, sanding, chipping, abrading	Eye hazard	Safety glasses/ goggles, face shield		Maintenance
Grinding, sanding, chipping, abrading	Hand lacerations, impingement	Leather or thick cloth work gloves	When using powered tools	Maintenance
Welding, brazing	Eye hazard, burns	Welder helmet, apron, gloves, chaps	See selection chart for proper lens shade	Maintenance
Work on live electrical circuits	Electric shock	Electrical rated gloves, non-conductive wrapped tools, rubber mats, face shield, dielectric footwear, rubber sleeves	Area must be isolated, inspected and attendant must be on scene.	Maintenance

## **Appendix C: General Guidelines for Choosing Personal Protective Equipment**

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### *Eye and Face Protection*

When must I provide eye protection for employees?

How do I select the proper protective eyewear for employees?

If employees wear eyeglasses with prescription lenses, may I consider these eye protections?

What kinds of eye and face protectors are there? What are they for?

Can face shields protect employees instead of goggles or protective spectacles?

How do I choose the correct eye protection from among all the different types?

How dark do lenses on welding helmets and goggles need to be?

Once I have selected the appropriate protective eye equipment, how do I make sure employees use it properly?

My workplace gets pretty dirty. How will my employees keep their protective eyewear clean and effective?

My employees work in shifts. Could I provide one pair of protective eyewear for each position instead of each employee?

### *Head Protection*

When do my employees need head protection?

What should I look for in head protection?

What types of head protection are available?

How do I choose the correct protective helmets from among the different types?

I have purchased new hard hats for my employees that meet the ANSI requirements. Have I fulfilled my responsibility to protect my employees' heads?

Could employees wearing hard hats and working at elevations create a potential hazard for the employees working below?

Can I require employees to cut their hair if it is long enough to get tangled in machinery?

Once I have selected helmets to protect my employees' heads, how do I make sure they use them properly?

How do I make sure that the hard hats I provide will be kept in good condition?

### Foot and Leg Protection

When must I provide foot and leg protection?

What are the types of protection and where do I use them?

What should I look for when choosing safety shoes for my employees? Conductive Shoes; Electrical Hazard, Safety-Toe Shoes; Foundry Shoes

Once I have selected equipment to protect my employees' feet and legs, how do I make sure they use it properly?

### Hand and Arm Protection

When must I provide hand and arm protection?

What kind of equipment is necessary to protect hands and arms?

Is there one kind of glove that will protect against all workplace hazards?

What kinds of protective gloves are available? Metal Mesh, Leather or Canvas Gloves; Fabric and Coated Fabric Gloves; Chemical- and Liquid-Resistant Gloves

How do I make sure my employees properly use the equipment I have selected?

### Body Protection

When must I provide my employees with full body protection?

If only part of the body faces potential injury, must I provide my employees with full body protection?

From what material should protective clothing be made?

How do I make sure employees properly use the body protection I provide?

## Summary

### List of Checklists, Tables and Figures

Checklist C: Use and Care of Eye and Face Protection  
Checklist D: Use and Care of Head Protection  
Checklist E: Use and Care of Foot and Leg Protection  
Checklist F: Use and Care of Hand and Arm Protection  
Checklist G: Use and Care of Body Protection

Table 1. Eye and Face Protector Selection Guide  
Table 2. Filter Lenses for Protection Against Radiant Energy  
Table 4. Glove Chemical Resistance Selection Chart

Figure 1. Recommended Eye and Face Protectors  
Figure 2. Hard Hat  
Figure 3. Safety Shoes

## Eye and Face Protection

### **When must I provide eye protection for employees?**

You must provide eye protection for employees whenever they are exposed to potential eye injuries during their work if work practice or engineering controls do not eliminate the risk of injury. Some of the things that might cause eye injuries include the following:

- Dust and other flying particles, such as metal shavings or wool fibers.
- Molten metal that might splash.
- Acids and other caustic liquid chemicals that might splash.
- Blood and other potentially infectious body fluids that might splash, spray or splatter.
- Intense light such as that created by welding arcs and lasers.

## How do I select the proper protective eyewear for employees?

Begin with the following criteria:

- Eye protection must protect against the specific hazard(s) encountered in the workplace.
- It must be reasonably comfortable to wear.
- Eye protection must not restrict vision or movement.
- Eye protection must be durable and easy to clean and disinfect.
- Eye protection must not interfere with the function of other required PPE.

In addition, the American National Standards Institute, Inc. (ANSI) has issued standard requirements for the design, construction, testing and use of protective devices for eyes and face.

All protective eyewear you purchase for your employees must meet the requirements of ANSI Z87.1-2003 for devices purchased after August 2003, and ANSI Z87.1-1989 for devices purchased before that date.

### ***If employees wear eyeglasses with prescription lenses, may I consider these eye protection?***

No. Eyeglasses designed for ordinary wear do not provide the level of protection necessary to protect against workplace hazards. Special care must be taken when choosing eye protectors for employees who wear eyeglasses with corrective lenses such as the following:

- Prescription spectacles, with side shields and protective lenses meeting the requirements of ANSI Z87.1, that also correct the individual employee's vision.
- Goggles that can fit comfortably over corrective eyeglasses without disturbing the alignment of the eyeglasses.
- Goggles that incorporate corrective lenses mounted behind protective lenses.

You also must provide protective eyewear to employees who wear contact lenses and are exposed to potential eye injury. Eye protection provided to these employees may also incorporate corrective eyeglasses. Thus, if an employee must don eyeglasses in the event of contact lens failure or loss, he or she will still be able to use the same protective eyewear.

### ***What kind of eye and face protectors are there? What are they for?***

- *Safety spectacles.* These protective eyeglasses are made with safety frames constructed of metal and/or plastic and are fitted with either corrective or plain impact-resistant lenses. They come with and without side shields, but most workplace operations will require side shields.
- *Impact-resistant spectacles.* This eyewear can be used for moderate impact from particles produced by such jobs as carpentry, woodworking, grinding and scaling.
- *Side shields.* These protect against particles that might enter the eyes from the side. Side shields are made of wire mesh or plastic. Eye-cup-type side shields provide the best protection.
- *Goggles.* You may choose from many different types of goggles, each designed for specific hazards. Generally, goggles protect eyes, eye sockets and the facial area immediately surrounding the eyes from impact, dust and splashes. Some goggles fit over corrective lenses. There are other goggles specifically designed and required for use with chemicals and pesticides.
- *Welding shields.* Constructed of vulcanized fiber or fiberglass and fitted with a filtered lens, these protective devices are designed for the specific hazards associated with welding. Welding shields protect your employees' eyes from burns caused by infrared or intense radiant light, and they protect face and eyes from flying sparks, metal spatter and slag chips produced during welding, brazing, soldering and cutting. See Table 1 for assistance in choosing the appropriate filter for your employees' tasks.
- *Laser safety goggles.* Laser safety goggles provide a range of protection against the intense concentrations of light produced by lasers. The type of laser safety goggles you choose will depend upon the equipment and operating conditions in your workplace. Chapter III:6, "Laser Hazards," in the OSHA Technical Manual(5) will help you select the appropriate protection for your employees.
- *Face shields.* These transparent sheets of plastic extend from the brow to below the chin across the entire width of the employee's head. Some are polarized for glare protection. Choose face shields to protect your employees' faces from nuisance dusts and potential splashes or sprays of hazardous liquids. There are special versions that use screening instead of plastic for use by tree trimmers and brush operations.

- *Sunglasses.* It is important to protect eyes from excessive exposure to sunlight.
- *Ultraviolet (UV) radiation* from sunlight can damage the lens and retina of the eye, causing cataracts, macular degeneration and other conditions that could affect the ability to see clearly. To protect the eyes well, sunglasses must absorb at least 98% of UV radiation. Lifeguards require sunglasses as essential PPE.
- *CPR/Pocket Masks.* Face Protection is needed when performing CPR. Masks and face shields prevent backflow of air and/or contaminants from patient to rescuer. Masks/shields vary in style and are both reusable and disposable. This should be standard equipment for anyone who is CPR qualified.
- *Nuisance Dust Masks.* These types of masks are covered in the Respiratory Protection Program. Please refer to the SOP for that program.

***Can face shields protect employees instead of goggles or protective spectacles?***

Face shields do not protect employees from impact hazards. You may, however, use face shields in combination with goggles or safety spectacles to protect against impact hazards, even in the absence of dust or potential splashes, for additional protection beyond that offered by goggles or spectacles alone.

***How do I choose the correct eye protection from among all the different types?***

Each kind of protective eyewear is designed to protect against specific hazards. By completing the hazard assessment of your workplace outlined in the previous section, you will identify the specific workplace hazards that pose a threat to your employees' eyes and faces. Tables 1, 2 and 4 and Figure 1 will help you find the protective devices most suited for your employees and your workplace. Locate the operations and hazards most similar to those in your workplace in Table 1 and match the number to the corresponding drawing in Figure 1. Welding operations require lenses to be tinted to a degree sufficient to protect against the specific intensity of light present during the tasks your employees perform (see Tables 1 and 2).

## **table 1.**

--

### ***How dark do lenses on welding helmets and goggles need to be?***

Intensity of light or radiant energy produced by welding, cutting or brazing operations varies according to a number of factors including the task producing the light, the electrode size and the arc current.

Table 2 shows the minimum protective shade for a variety of welding, cutting and brazing operations. To protect employees who are exposed to intense radiant energy, begin by selecting a shade too dark to see the welding zone. Then try lighter shades until you find one that allows a sufficient view of the welding zone without going below the minimum protective shade.

**table 2.**

**figure 1.**

***Once I have selected the appropriate eye protection equipment, how do I make sure employees use it properly?***

Train your employees to use the protective eyewear. Checklist C will help you prepare your employees to use and care for the eye protection you provide.

## checklist C.

***My workplace gets pretty dirty. How will my employees keep their protective eyewear clean and effective?***

Show your employees how to clean the eye protectors. Allow them time at the end of their shifts to do the following:

- Disassemble goggles or spectacles.
- Thoroughly clean all parts with soap and warm water.
- Carefully rinse off all traces of soap.
- Replace all defective parts.

Occasionally, you must disinfect the protective eyewear. To do so, after cleaning you can do the following:

- Immerse and swab all parts for 10 minutes in a germicidal solution.
- Remove all parts from the solution and hang in a clean place to air-dry at room temperature or with heated air.
- Do not rinse the parts after submerging them in the disinfectant. Rinsing will remove the germicidal residue that remains after drying.
- Ultraviolet disinfecting and spray-type disinfecting solutions also may be used after washing.

***My employees work in shifts. Could I provide one pair of protective eyewear for each position instead of each employee?***

Yes. If you do this, however, you must disinfect shared protective eyewear after each use. If the goggles or spectacles do not have to be individually designed to incorporate an employee's corrective lenses and you disinfect the eyewear between uses by different employees, more than one employee may use the same set of protective eyewear.

## **If a Wood Chip Chips.**

## Head Protection

### ***When do my employees need head protection?***

You must provide head protection for your employees if:

- Objects might fall from above and strike them on the head.
- They ride bicycles and may fall off a bike.
- They participate in land/cliff rescues.
- They might bump their heads against fixed objects, such as exposed pipes or beams.
- They work near exposed electrical conductors.
- They need head protection from hazardous chemicals.

### ***What should I look for in head protection?***

In general, protective helmets or hard hats should:

- Resist penetration by objects.
- Absorb the shock of a blow.
- Be water-resistant and slow-burning.
- Come with instructions explaining proper adjustment and replacement of the suspension and headband.

Hard hats require a hard outer shell and a shock-absorbing lining. The lining should incorporate 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 user's head. This design provides shock absorption during impact and ventilation during wear.

As with devices designed to protect eyes, the design, construction, testing and use of protective helmets must meet standards established by ANSI.

### ***What types of head protection are available?***

Hard hats are divided into three industrial classes:

- Class A (now Class G under new ANSI standard Z89.1-1997). These helmets are for general service. They provide good impact protection, but limited voltage protection (2,200 volts). They are used mainly in mining, building construction, shipbuilding, lumbering and manufacturing.
- Class B (now Class E). Choose Class B helmets if your employees are engaged in electrical work. They protect against falling objects and high-voltage (20,000 volts) shock and burns.
- Class C Designed for comfort, these lightweight helmets offer limited protection. They protect workers from bumping against fixed objects, but do not protect against falling objects or electric shock.

Look at the inside of any protective helmet you are considering for your employees, and you should see a label showing the manufacturer's name, the ANSI standard it meets and its class. Figure 2 shows the basic design of hard hats. The label should also have the manufacturer's suggested date of replacement.

### ***How do I choose the correct protective helmets from among the different types?***

Each kind of protective helmet is designed to protect against specific hazards. By completing the hazard assessment outlined above, you will identify the specific workplace hazards that pose a threat to your employees' heads.

### ***I have purchased new hard hats that meet the ANSI requirements. Have I fulfilled my responsibility to protect my employees' heads?***

No. Issuing appropriate head protection to employees is a major first step, but you must make sure that the hard hats continue to provide sufficient protection to your employees. Do this by training your employees in the proper use and maintenance of hard hats, including daily inspection. If your employees identify any of the following defects, remove the hard hats from service:

- The suspension system shows signs of deterioration such as:
  - Cracking.
  - Tearing.
  - Fraying.

- The suspension system no longer holds the shell from 1 inch to 1-1/4 inches (2.54cm - 3.18cm) away from the employee's head.
- The brim or shell is cracked, perforated or deformed.
- The brim or shell shows signs of exposure to heat, chemicals, ultraviolet light or other radiation. Such signs include:
  - Loss of surface gloss.
  - Chalking.
  - Flaking (a sign of advanced deterioration).

***Could employees wearing hard hats and working at elevations create a potential hazard for the employees working below?***

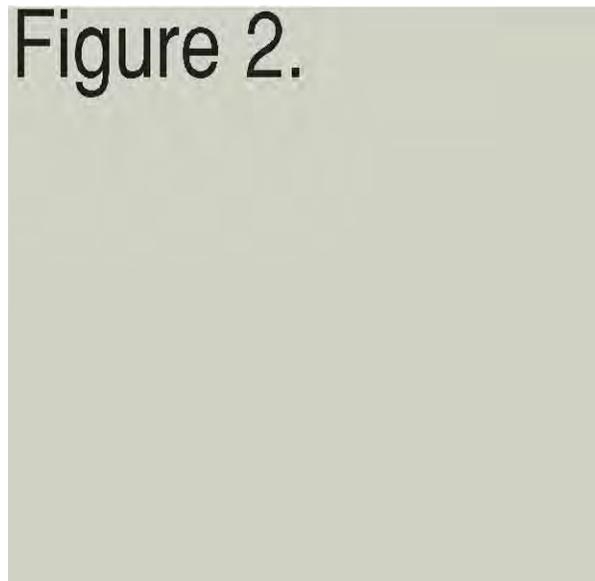
To protect employees working below, you must provide chin straps for the protective helmets worn by employees working at higher elevations, whether in an aerial lift or at the edge of a pit. The chin straps should be designed to prevent the hard hats from being bumped off the employees' heads.

***Can I require employees to cut their hair if it is long enough to get tangled in machinery?***

Long hair (longer than four inches) can be drawn into machine parts such as chains, belts, rotating devices, suction devices and blowers. Hair may even be drawn into machines otherwise guarded with mesh. Although you need not require your employees to cut their hair, you must require them to cover and protect their hair with bandannas, hairnets, turbans, soft caps or the like. These items, however, must not themselves present a hazard.

***Once I have selected helmets to protect my employees' heads, how do I make sure they use them properly?***

Train your employees to use the hard hats. Checklist D will help you instruct your employees to use and care for the head protection you provide.



***How do I make sure that the hard hats I provide will be kept in good condition?***

You must train your employees to maintain and care for the head protection. Your training communicates the importance of wearing head protection and its proper care. Important information you will want to consider when training employees on how to care for their hard hats includes the following:

- Paints, paint thinners and some cleaning agents can weaken the shell of the hard hat and may eliminate electrical resistance. Consult the helmet manufacturer for information on the effects of paint and cleaning materials on their hard hats. Keep in mind that paint and stickers can also hide signs of deterioration in the hard-hat shell. Limit their use.
- Ultraviolet light and extreme heat, such as that generated by sunlight, can reduce the strength of the hard hats. Therefore, employees should not store or transport hard hats on the rear-window shelves of automobiles or otherwise in direct sunlight.

Also, instruct employees to clean the protective helmets periodically by:

- Immersing for one minute in hot (approximately 140°F, or 60°C) water and detergent.
- Scrubbing.
- Rinsing in clear hot water.

## **Checklist D.**

## Foot and Leg Protection

### ***When must I provide foot and leg protection?***

You must provide foot and leg protection if your workplace hazard assessment reveals potential dangers to these parts of the body. Some of the potential hazards you might identify include the following:

- Heavy objects such as barrels or tools that might roll onto or fall on employees' feet.
- Sharp objects such as nails or spikes that might pierce the soles or uppers of ordinary shoes.
- Molten metal that might splash on feet or legs.
- Hot or wet surfaces.
- Slippery surfaces.

### ***What are the types of protection and where do I use them?***

The type of foot and leg protection you provide your employees will depend upon the specific workplace hazards you identify and the specific parts of the feet or legs exposed to potential injury. Safety footwear must meet minimum compression and impact performance standards and testing requirements established by ANSI.

- Leggings. Use these to protect the lower legs and feet from heat hazards, like molten metal or welding sparks. Safety snaps allow leggings to be removed quickly.
- Metatarsal guards. Made of aluminum, steel, fiber or plastic, these guards may be strapped to the outside of shoes to protect the instep area from impact and compression.
- Toe guards. Toe guards may be made of steel, aluminum or plastic. They fit over the toes of regular shoes. These guards protect only the toes from impact and compression hazards.
- Combination foot and shinguards. These guards may be used in combination with toe guards when greater protection is needed.

- Safety shoes. These sturdy shoes have impact-resistant toes and heat-resistant soles that protect against hot work surfaces common in roofing, paving and hot-metal industries. The metal insoles of some safety shoes protect against puncture wounds. Safety shoes may also be designed to be electrically conductive (to prevent the buildup of static electricity in areas with the potential for explosive atmospheres) or nonconductive (to protect workers from workplace electrical hazards).

## A Shoe Thing...

### ***What should I look for when choosing safety shoes for my employees?***

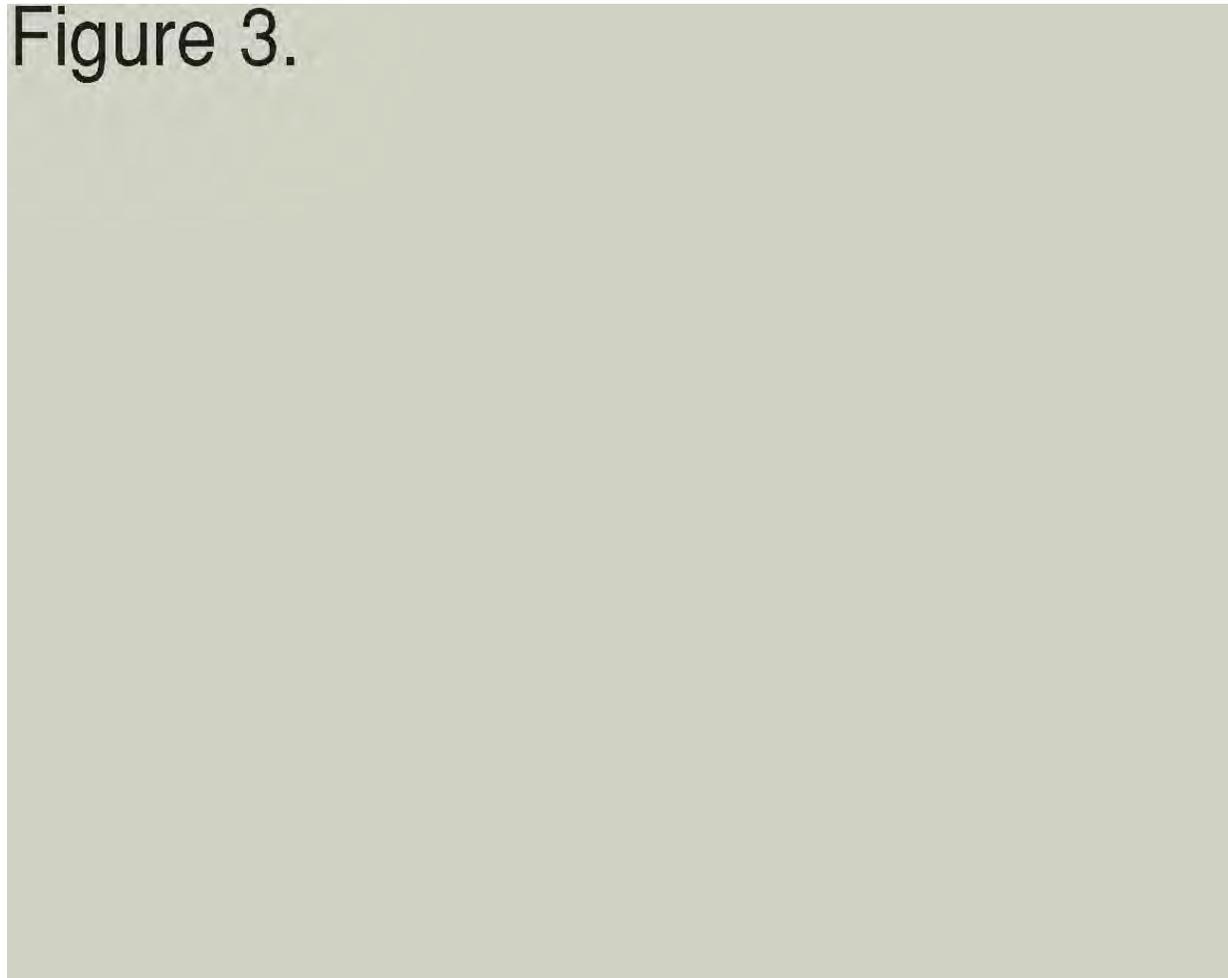
Generally, safety shoes must be sturdy and must have impact-resistant safety toes, instep protection and heat-resistant soles (see Figure 3). All safety shoes must comply with the ANSI standard mentioned above. In addition, depending on the types of worker exposures, you may need to provide specially designed safety shoes such as conductive or electrical-hazard safety shoes.

### **Conductive Shoes**

Electrically conductive shoes protect against the buildup of static electricity. Essentially, these shoes ground the employees who wear them. Employees working in explosive and hazardous locations such as explosives manufacturing facilities or grain elevators must wear conductive shoes to reduce the risk of static electricity buildup on an employee's body that could produce a spark and cause an explosion or fire. During training, employees must be instructed not to use foot powder or wear socks made of silk, wool or nylon with conductive shoes. Foot powder insulates and retards the conductive ability of the shoes. Silk, wool and nylon produce static electricity.

Conductive shoes are not general-purpose shoes and must be removed upon completion of the tasks for which they are required. Employees exposed to electrical hazards must never wear conductive shoes.

## Figure 3.



### Electrical Hazard, Safety-Toe Shoes

Electrical hazard, safety-toe shoes are nonconductive and will prevent your employees' feet from completing an electrical circuit to the ground. They can protect employees against open circuits of up to 600 volts in dry conditions. Electrical hazard, safety-toe shoes should be used in conjunction with other insulating equipment and precautions to reduce or eliminate the potential for your employees' bodies or parts of their bodies to provide a path for hazardous electrical energy. Note: **Nonconductive** footwear must not be used in explosive or hazardous locations; in such locations, **electrically conductive** shoes are required.

Train your employees to recognize that the insulating protection of electrical hazard, safety-toe shoes may be compromised if:

- The shoe is wet.
- The rubber sole is worn through.
- Metal particles become embedded in the sole or heel.
- Other parts of the employees' bodies come into contact with conductive, grounded items.

### Foundry Shoes

In addition to insulating your employees' feet from the extreme heat of molten metal, foundry shoes prohibit hot metal from lodging in shoe eyelets, tongues or other parts. These snug-fitting leather or leather-substitute shoes have leather or rubber soles and rubber heels. In addition, all foundry shoes must have built-in safety toes.

### **Once I have selected equipment to protect my employees' feet and legs, how do I make sure they use it properly?**

Train your employees to use the protective footwear. Checklist E will help you instruct your employees to use and care for the foot and leg protection you provide.

## **Checklist E.**

## Hand and Arm Protection

### **When must I provide hand and arm protection?**

If your workplace hazard assessment reveals that your employees risk injury to their hands and arms, and engineering and work practice controls do not eliminate the hazards, you must provide your employees with appropriate protection. The injuries you may need to guard against in your workplace include the following:

- Burns (including sunburn).
- Bruises.
- Abrasions.
- Cuts.
- Punctures.
- Poison Oak.
- Fractures.
- Amputations.
- Chemical exposures.

### ***What kind of equipment is necessary to protect the hands and arms?***

For many workplace operations, machine guards such as point-of-operation guards will be sufficient. For example, install a barrier that makes it impossible for employees to put their hands at the point where a table saw blade makes contact with the wood it cuts. For other hazardous operations, you may be able to institute work procedures that eliminate the risk of injury to your employees' hands or arms. When such measures fail to eliminate the hazard, however, protective gloves will be the primary means of protecting employees' hands. When the risk of injury includes the arm, protective sleeves (often attached to the gloves) may be appropriate. When employees are working in or around poison oak, a barrier cream or lotion, such as Ivy Block®, Armor® or Tecnu® should be provided to the employee. If an employee is severely allergic, contact should be avoided whenever possible – if contact cannot be avoided, the employee should be provided with disposable gloves and disposable coveralls (such as Tyvek®) as well as barrier creams. Sunscreen (at least 20 SPF) is also needed if employees are frequently exposed to the sun.

### ***Is there one kind of glove that will protect against all workplace hazards?***

No. The nature of the hazard(s) and the operation to be performed will determine your selection of gloves. The variety of potential occupational hand injuries may make selecting the appropriate pair of gloves more difficult than choosing other protective equipment. Take care to choose gloves designed for the particular circumstances of your workplace.

### ***What kinds of protective gloves are available?***

Gloves made from a wide variety of materials are designed for virtually every workplace hazard. In general, however, they may be divided into four groups:

- Durable work gloves made of metal mesh, leather or canvas.
- Fabric and coated fabric gloves.
- Chemical- and liquid-resistant gloves.
- Insulating rubber gloves.

#### ***Metal Mesh, Leather or Canvas Gloves***

Sturdy gloves made from metal mesh, leather or canvas provide protection against cuts, burns and sustained heat.

- *Leather gloves.* Leather gloves protect against sparks, moderate heat, blows, chips and rough objects. Welders in particular need the durability of higher-quality leather gloves.
- *Aluminized gloves.* These gloves usually are used for welding, furnace and foundry work because they provide reflective and insulating protection against heat. Aluminized gloves require an insert made of synthetic materials that protect against heat and cold.
- *Aramid fiber gloves.* Aramid is a synthetic material that protects against heat and cold. Many glove manufacturers use aramid fiber to make gloves that are cut- and abrasive-resistant and wear well.
- *Other synthetic materials.* Several manufacturers make gloves with other synthetic fabrics that offer protection against heat and cold. In addition to protection against temperature extremes, gloves made with other synthetic materials are cut- and abrasive-resistant and may withstand some diluted acids. These materials do not stand up against alkalis and solvents.

#### ***Fabric and Coated Fabric Gloves***

These gloves are made of cotton or other fabrics to provide varying degrees of protection.

- *Fabric gloves.* Can protect against dirt, slivers, chafing and abrasion. These gloves do not provide sufficient protection, however, to be used with rough, sharp or heavy materials.

- Adding a plastic coating to some fabric gloves strengthens them and makes them effective protection for a variety of tasks.
- Coated fabric gloves. Manufacturers normally make these gloves from cotton flannel with napping on one side. By coating the unnapped side with plastic, fabric gloves are transformed into general-purpose hand protection offering slip-resistant qualities. These gloves are used for tasks ranging from handling bricks and wire rope to handling chemical containers in laboratory operations. When selecting gloves to protect against chemical exposure hazards, always check with the manufacturer (or review the manufacturer's product literature) to determine the gloves' effectiveness against the specific chemicals and conditions in the workplace.

## Helping Hands...

### *Chemical- and Liquid-Resistant Gloves*

Gloves made of rubber (latex, nitrile or butyl), plastic or synthetic rubber-like material such as neoprene, protect workers from burns, irritation and dermatitis caused by contact with oils, greases, solvents and other chemicals. The use of rubber gloves also reduces the risk of exposure to blood and other potentially infectious substances. Some common gloves used for chemical protection are described below. In addition, Table 4 rates various gloves as protectors against specific chemicals and will help you select the most appropriate gloves to protect your employees.

- *Butyl rubber gloves.* These gloves protect against nitric acid, sulfuric acid, hydrofluoric acid, red fuming nitric acid, rocket fuels and peroxide. Highly impermeable to gases, chemicals and water vapor, butyl rubber gloves also resist oxidation and ozone corrosion. In addition, they resist abrasion and remain flexible at low temperatures.
- *Natural latex or rubber gloves.* The comfortable wear and pliability of latex gloves, as well as their protective qualities, make them popular general-purpose gloves. In addition to resisting abrasions caused by sandblasting, grinding and polishing, these gloves protect workers' hands from most water solutions of acids, alkalis, salts and ketones. When selecting hand protection, you should be aware that latex gloves have caused allergic reactions in some individuals and thus may not be appropriate for all of your employees. Hypoallergenic gloves, glove liners and powderless gloves are possible alternatives for individuals who are allergic to latex gloves.
- *Neoprene gloves.* These gloves have good pliability, finger dexterity, high density and tear resistance, which protect against hydraulic fluids, gasoline, alcohols, organic acids and alkalis.
- *Nitrile rubber gloves.* These sturdy gloves provide protection from chlorinated solvents such as trichloroethylene and perchloroethylene. Although intended for jobs requiring dexterity and sensitivity, nitrile gloves stand up to heavy use even after prolonged exposure to substances that cause other gloves to deteriorate. In addition, nitrile gloves resist abrasions, punctures, snags and tears.

## **Table 4.**

## **Table 4.**

## **Table 4.**

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### ***How do I make sure my employees properly use the equipment I have selected?***

Train your employees to use the protective gloves and sleeves. Checklist F will help you teach your employees how to use and care for the equipment.

# Checklist F.

## Body Protection

### ***When must I provide my employees with full body protection?***

You must provide body protection for employees if they are threatened with bodily injury of one kind or another while performing their jobs, and if engineering, work practice and administrative controls have failed to eliminate these hazards. Workplace hazards that could cause bodily injury include the following:

- Intense heat.
- Splashes of hot metals and other hot liquids.
- Impacts from tools, machinery and materials.
- Cuts.
- Hazardous chemicals.
- Contact with potentially infectious materials, like blood.
- Poison oak.
- Sunburn.
- Radiation.

***If only part of the body faces potential injury, must I provide my employees with full body protection?***

As with all protective equipment, protective clothing is available to protect against specific hazards. You need to provide personal protective equipment only for the parts of the body exposed to possible injury.

Depending upon hazards in your workplace, you may need to provide your employees with one or more of the following:

- Vests.
- Orange safety vests or the new lime-green NIOSH-approved vests.
- Sunscreen.
- Jackets.
- Aprons.
- Coveralls.
- Surgical gowns.
- Wetsuits.
- Life jackets.
- Back brace.
- Full body safety harness.
- Full body suits.

If your hazard assessment indicates that you must provide full body protection against toxic substances or harmful physical agents, you must:

- Inspect the clothing carefully.
- Ensure proper fit.
- Make sure the protective clothing functions properly.

***From what material should protective clothing be made?***

Protective clothing comes in a variety of materials, each suited to particular hazards. Conduct your hazard assessment. Identify the sources of any possible bodily injury. Install any feasible engineering controls, and institute work practice controls to eliminate the hazards. If the possibility of bodily injury still exists, provide protective clothing constructed of material that will protect against the specific hazards in your workplace. Materials for protective clothing include the following:

- Paper-like fiber. Disposable suits made of this material provide protection against dust and splashes (e.g., Tyvek® protective suit).
- Treated wool and cotton. Protective clothing made from treated wool and cotton adapts well to changing workplace temperatures and is comfortable as well as fire-resistant. Treated cotton and wool clothing protects against dust, abrasions and rough and irritating surfaces.

- Duck. This closely woven cotton fabric protects employees against cuts and bruises while they handle heavy, sharp or rough materials.
- Leather. Leather protective clothing is often used against dry heat and flame.
- Rubber, rubberized fabrics, neoprene and plastics. Protective clothing made from these materials protects against certain acids and other chemicals.

Be aware that different materials will protect against different chemical and physical hazards. When chemical or physical hazards are present, check with the clothing manufacturer to make sure that the material selected will provide protection from the specific chemical or physical hazards in your workplace.

***How do I make sure employees properly use the body protection I provide?***

Train your employees to use the protective clothing. Checklist G will help you instruct them in the use and care of the body protection.

## **Checklist G.**

## Summary

You must consider many factors when selecting PPE to protect your employees from workplace hazards. With the variety of operations that can present hazards and the wide array of PPE available, this selection process can be confusing and at times overwhelming. Because of this, OSHA requires that you implement a PPE program to help you systematically assess the hazards in the workplace and select the appropriate PPE that will protect your workers from those hazards. As part of this PPE program, you must do the following:

- Assess the workplace to identify equipment, operations, chemicals and other workplace components that could harm your employees.
- Implement engineering controls and work practices to control or eliminate these hazards to the extent feasible.
- Select the appropriate types of PPE to protect your employees from hazards that cannot be eliminated or controlled through engineering controls and work practices.
- Inform your employees why the PPE is necessary and when it must be worn.
- Train your employees how to use and care for the selected PPE and how to recognize PPE deterioration and failure.
- Require your employees to wear the selected PPE in the workplace.