

## CHAPTER 4- Personal Protective Clothing

**Objective:** The purpose of this safety policy and procedure is to eliminate or minimize Washington State Department of Transportation exposure to work hazards.

**Scope:** The use of Personal Protective Equipment (PPE) to eliminate injuries is an important component of WSDOT's safety program. PPE includes all clothing and accessories designed to create a barrier against workplace hazards. PPE should be considered a means of controlling hazards only after engineering controls, administrative controls, and safe work practices have been implemented.

This safety policy and procedure establishes the methods and accountability for implementing the WSDOT Personal Protective Equipment (PPE) Program. It provides guidelines for selecting PPE based on the hazard. It includes provisions for training and discussion on the need for hazard assessments. It also presents PPE requirements for the head, eye and face, ear, hand, foot and leg, body and respiratory system. Additionally, this safety policy and procedure presents discussion on fall protection requirements and the use and maintenance of PPE.

This document details the areas of responsibility for managers/unit heads, supervisors, employees, Safety Managers, and Purchasing within WSDOT.

This safety policy and procedure affects any employee who is exposed to hazards that require PPE.

**Goals:** In order to protect the health of WSDOT workers

### **Reference:**

- Personal Protective Equipment, WAC 296-800-160
- WSDOT Directive 75-???
- Other

### **Section 1.0 Administrative Structure and Responsibilities**

#### General Responsibilities

It is the responsibility of each manager/unit head, supervisor and employee to ensure implementation of WSDOT's safety policy and procedure on PPE. It is also the responsibility of each WSDOT employee to report immediately any unsafe act or condition to his or her supervisor.

It is the responsibility of WSDOT to provide and maintain equipment that is adequate and is safe in design and construction.

### Managers/Unit Heads

Managers/Unit Heads are responsible for:

- Ensuring that adequate funds are available and budgeted for the purchase of PPE in their areas
- Identifying the employees affected by this safety policy and procedure. Managers/Unit Heads will obtain and coordinate the required training for the affected employees, and
- Ensuring compliance with PPE through their auditing process.

### Supervisors

Supervisors will be responsible for:

- Communicating appropriate needs to managers/unit heads and/or supervisors,
- Ensuring that employees are properly trained before using PPE and that they are being worn properly, and
- Ensuring that no employee is allowed in a work environment without the proper protective equipment consistent with the hazard.

### Employees

- Employees shall comply with all applicable guidelines contained in this safety policy and procedure.
- Employees are to report any unsafe act associated with this safety policy and procedure to their supervisors. Additionally, employees shall identify and report any hazards, which may require PPE.
- Employees who are assigned PPE are to keep them available and in good working order at all times and to have them replaced when they become worn or unsafe.

### Safety Office

Safety Office responsibilities include:

- Providing prompt assistance to managers/unit heads, supervisors, or others as applicable on any matter concerning this safety policy and procedure,

- Assisting in developing or securing required training. Safety offices will also provide assistance in performing hazard assessments,
- Working with Purchasing and Supply Officers to ensure that all newly purchased PPE comply with current safety regulations,
- Conducting hazard assessments and training other designated employees to perform hazard assessments. Additionally, Safety Managers will provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure.

### Regional Supply Officers

Regional Supply Officers will support the Divisions/Units with the selection and purchasing of PPE.

### **Section 2.0 Rules and Regulations:**

#### General

It is the policy of WSDOT to provide a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. PPE shall be specified, appropriate to the hazard, only after engineering practices, administrative practices, and safe work practices have been implemented to control the hazard(s). Proper training regarding PPE will also be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

#### Definitions

1. **ANSI** - American National Standards Institute.
2. **PPE** - Personal Protective Equipment.

#### General Provisions

This section details the provisions of this safety policy and procedure with each provision discussed in a separate subsection. These provisions are:

1. Hazard Assessment
2. Head Protection
3. Eye and Face Protection
4. Ear Protection
5. Hand Protection
6. Foot and Leg Protection

7. Body Protection
8. Respiratory Protection
9. Fall Protection
10. Use and Maintenance

### Hazard Assessment

A hazard assessment will be performed in the workplace to determine and identify all hazards that would necessitate PPE.

Typically, the hazard assessment will consist of:

1. A walk-through survey to identify hazard sources based on general hazard categories
2. Observation of the sources
3. Organizing data from the survey
4. Analyzing data from the survey

The basic hazard categories that should be considered in the walk-through survey are:

1. Impact
2. Penetration
3. Compression (roll-over)
4. Chemical
5. Heat
6. Harmful dust
7. Light (optical radiation)

Appendix A presents a hazard assessment form for use throughout WSDOT. This hazard assessment form can provide the user with a formal and accurate assessment of worksite hazards. This form focuses on head, eye and face, hand and arm, and foot and leg hazards. Forms of hazard assessments are already in place in WSDOT's

The keys to hazard assessment are the recognizing, evaluating, and controlling of hazards. During the assessment a determination will be made if the hazard can be eliminated.

Wherever possible, engineering and administrative controls should be used first to eliminate or reduce employees' exposure to any workplace hazard.

If hazards are present, then a hazard analysis shall be done so WSDOT can:

1. Select the types of PPE that will protect the affected employee from the identified hazards
2. Communicate selection decisions to each affected employee
3. Select PPE that properly fits each affected employee

Appendix B presents hazard analysis forms, which determine the highest overall hazards, and helps select the appropriate PPE for those hazards. The hazard analysis provides a convenient format and methodology for organizing and analyzing data from the hazard assessment.

### Head Protection

Hard hats protect employees from head injuries caused by falling or flying objects; bump hazards in close or confined spaces, and electrical shocks or burns. The hard hat should be easily adjustable so employees will wear the hat properly.

WSDOT hard hats should:

1. Resist a reasonable impact force without breaking or collapsing the shell or damaging the internal suspension Dissipate and/or absorb as much impact force as possible to avoid transmitting the force to the head, spinal column, or other parts of the body
2. Resist impact penetration
3. Provide electrical protection as applicable

WSDOT hard hats are designated either as Class A or Class B hard hats. Class A hard hats provide protection against impact and falling or flying objects. Class B hard hats protect the head against high voltage electricity. All WSDOT hard hats should be disposed of whenever the helmet has received impact or shows signs of deterioration.

All WSDOT employees are required to wear a hard hat in accordance with this section and with the WAC 296-155-205, WAC 296-155-305, and WAC 296-24-084. The hard hat should be high visibility and marked with at least 12 square inches of retro-reflective tape applied to provide 360 degrees of visibility.

Employees are required to wear a hard hat when working on or around the following:

1. Asphalt plant, crushers, blasting area, and asphalt-grinding operations.
2. Construction of bridges, structures, retaining walls, etc.

3. Overhead work such as in a trench, rock-fall areas, installing signs, installing poles, work under bridges, electrical conductors, etc.
4. Operating equipment with arms, booms, buckets, etc.
5. Cranes, pile drivers, drilling.
6. Working as a flagger.
7. Brush cutter work, dangerous tree work, and other logging operations.
8. Any designated hardhat area.

Supervisors have the authority to require employees to wear hard hats for safety considerations. Employees must have their hard hat on site and readily available for when work conditions require their use, per WAC 296-155-205(2).

Other Acceptable Head Wear:

1. Employees performing work activities, which do not require use of a hard hat may wear other types of head wear. This headwear must not impair visibility or otherwise create a safety hazard.
2. WSDOT Regions, Divisions, and Service Centers may develop criteria or limitations on types of acceptable alternate head wear, or messages which may or may not be displayed on them.

### Eye and Face Protection

Flying particles, cuts, chemicals, injurious light, heat rays, and blows to the face and eyes causes eye injuries. To prevent such injuries, many types of eye and face protection devices are available in WSDOT.

There are three basic types of eye and face protection used in WSDOT. These are:

1. Safety glasses (with or without side shields)
2. Goggles
3. Face shields

Eye and face protection devices should protect against the intended hazard and be:

1. Reasonably comfortable
2. Fit properly
3. Durable
4. Capable of being disinfected

5. Easy to clean
6. In good repair

The eye and face protection required will depend upon the potential hazards. Appendix C presents an Eye and Face Protection selection chart for use within WSDOT.

All WSDOT employees must use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

### Ear Protection

Exposure to high noise levels can cause hearing loss or impairment. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is required to avoid hearing damage.

Types of ear protection devices used in WSDOT include:

1. Ear plugs
2. Ear muffs

There are a variety of earplugs available from WSDOT inventory. For specific requirements of information on WSDOT's hearing conservation program.

See chapter ??? Hearing Conservation Program

### Hand and Arm Protection

Hand and arm injuries are a significant component of workplace injuries. Hands and fingers are used to accomplish nearly all workplace activities and must be protected from injury. The types of hand and arm protective wear used in WSDOT include:

1. Cut-Resistant
2. High and Low Temperature
3. Splinters, Cuts, and Abrasions
4. Electrical Protection
5. Repetitive Motion and Vibration
6. Chemical Resistant

The required hand and arm protective wear will be based upon the hazard of the risk.

Appendix D presents details on the types of hand and arm protective wear used in WSDOT. Also, see WAC 296-45-25505 for further details on electrical protection gloves and protective equipment.

WSDOT will select and require the use of hand protection against skin absorption of harmful substances, severe abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes.

### Foot Protection

Safety shoes are used to protect the feet against injuries from heavy falling objects, rolling objects, objects piercing the soles, electrical hazards, crushing or lacerations. They are required for employees whose job duties present a risk of foot injury due to exposure to the above and where their job duties require the lifting, carrying, or moving of objects weighing more than fifteen pounds.

Rules for wearing safety footwear apply when performing (1) work that may expose employees to foot hazards and (2) activities that require safety footwear or safety-toe footwear for protection from work-related foot hazards.

### Definitions:

#### **Approved Safety Footwear**

1. Approved safety footwear is a substantial boot or shoe, made of leather or other equally firm materials, with the sole and heel designed and constructed for slip resistance.
2. Approved safety footwear is used for work activities that present foot injury hazards from falling or moving objects, or from other hazards such as burning, scalding, cutting, and penetration.
3. Approved safety footwear meets the safety shoe requirements established by the Occupational Safety and Health Act (OSHA) or the American National Standards Institute (ANSI).
4. Footwear that has deteriorated to the point where it does not provide adequate protection is not approved.

## Approved Safety-toe Footwear

1. Approved safety-toe footwear is approved safety footwear that also extends above the ankle, has a defined heel, slip resistant sole, and a puncture resistant shank, and built in steel or composite protection for the toe areas.
2. Approved safety-toe footwear is used for work activities that present frequent exposure to foot injury from heavy objects or equipment.
3. Approved safety-toe footwear must have a label attached indicating it meets the specifications of **ANSI Z41**.

## Electrical Hazard

There is an additional requirement for foot protection for employees exposed to hazards of accidental contact with live electrical circuits, electronically energized conductors, parts, or apparatus. These employees must wear footwear constructed with electrical hazard soles and heels, indicated on the footwear label with the code **EH**.

## Footwear Rules

1. Managers and Supervisors Responsible for Compliance - Managers and supervisors are responsible for ensuring employees are aware of, and follow, the requirements of this Instructional Letter.
2. All Risk Class 5307 Employees Must Wear Safety Footwear - Employees in risk class 5307 (medical aid code 2) must wear approved safety footwear while engaged in duties where there is danger of a foot injury. A listing of these classes is attached as Appendix E.
3. Designated Employees May Elect to Wear Safety-toe Footwear - Effective immediately, all designated employees as defined in Appendix B must wear approved safety footwear, and may elect to wear approved safety-toe footwear.
4. Visiting Work Sites with Foot Hazards - Employees who visit work sites where there is a danger of foot injury must use good judgment with regard to minimizing their exposure to locations and/or operations where there is the potential for foot injury.

## 5. Allowance Payable to Designated Permanent Employees for Safety-toe Footwear

When a permanent WSDOT employee designated in **Appendix E** elects to purchase and wear approved safety-toe footwear during the course of his or her regular duties, the employee is eligible for a reimbursement allowance of up to \$125.00 per biennium to help offset the purchase cost of approved safety-toe footwear.

Permanent WSDOT employees designated in **Appendix E** may choose to have their approved safety-toe footwear rebuilt as an alternative to purchasing a new pair. Employees are eligible for a reimbursement allowance of up to \$125.00 per biennium.

### *Procedure*

#### 1. Employee provides receipt

Employees must provide their supervisor with proof of purchase (receipt), dated after July 1, 2001, of safety-toe footwear that meets the specified standards to request reimbursement (i.e., must have **ANSI Z41** label).

Employees must provide their supervisor with a receipt for rebuilt safety-toe footwear and proof that footwear meets the ANSI Z41 standard (i.e., written documentation or a new stamp in the rebuilt footwear) to request reimbursement.

#### 2. Supervisor reviews and approves reimbursement

The supervisor ensures that any employee requesting reimbursement must wear approved safety-toe footwear while engaged in their regular duties and when, in the opinion of the Appointing Authority, performing other duties that require approved safety footwear. Supervisors may grant exceptions for those times when the employee is not performing fieldwork, such as meetings or training sessions.

The supervisor makes a copy of the receipt and indicates his or her approval for reimbursement on the copy.

The supervisor is authorized to grant reimbursement for the cost of approved safety-toe footwear, up to but not to exceed \$125.00 per biennium.

### 3. Disputes

Any disputes concerning the wearing of safety footwear or safety-toe footwear, eligibility for the allowance, footwear quality, or exceptions to this Instructional Letter are to be referred to the Appointing Authority.

#### Body Protection

Protective clothing is used to protect the body from potential exposures associated with work.

Personal protective vests, aprons, coats, pants, coveralls, and suits are available in a wide range of materials and shall be worn consistent with the workplace hazard. Protective clothing shall include but not be limited to cooling vests and suits, foul weather gear, knife cutting protection, high visibility vests flotation vests, welding and high heat protective clothing.

WSDOT will require the use of protective clothing for those employees who are exposed to body hazards. Examples include employees in laboratories, welders, employees in special processing areas or employees exposed to other body hazards.

#### Respiratory Protection

The workplace can present hazards to the lungs. Some of the most common hazards are the lack of oxygen and the presence of harmful dust, fogs, smokes, mists, fumes, gases, vapors, or sprays. Respirators prevent the entry of harmful substances into the lungs during breathing. Some respirators also provide breathable air so work can be performed where there is inadequate oxygen.

The prevention of atmospheric contamination at the worksite should be accomplished as far as feasible by engineering control measures (such as enclosing or confining the contaminant-producing operation, exhausting the contaminant, or substituting with less toxic materials). However, when engineering controls are not feasible, appropriate respirators must be used.

Respirators have their limitations and are not substitutes for effective engineering controls. No employee shall wear a respirator until he or she has completed the ??? Respiratory Training Program. ???Training is arranged through the safety office.

Refer to Chapter ??? for further details.

## Fall Protection

Fall Protection devices are those devices and systems designed to catch and hold a person after an accidental fall from height. When a person does fall, the proper fall arrest safety system can protect the worker.

The following fall protection devices are used in WSDOT

1. Safety Belts and Harnesses
2. Safety Nets
3. Lanyards, Deceleration Devices, and Lifelines
4. Ladder Climbing Safety Devices

??? When workers are exposed to falls during bridge construction, safety nets may be used. Safety nets are generally viewed as backup safety devices rather than primary life saving devices. Safety nets are required when workplaces are more than 25 feet above ground or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impractical.

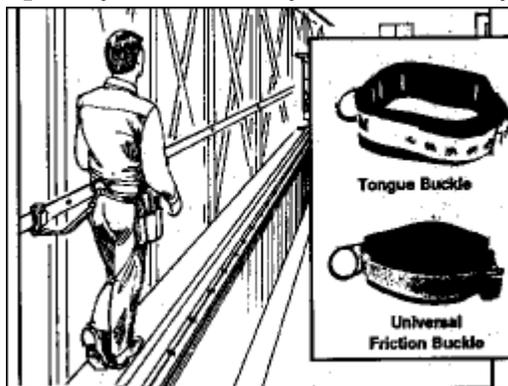


Figure 1



Figure 2

Figure 1 illustrates a typical safety harness. Safety belts or harnesses attached to a structure or lifeline are primary lifesaving devices for employees who work at high elevations. For work at low elevations, such as in confined spaces, the safety belt and lanyard system can be used to retrieve an injured or incapacitated person as shown in Figure 2.

Ladder safety climb systems combine the safety belt and lanyard with a rope or rail type grab device. Ladder safety climb devices can be used on high structures to provide the user safety as well as a system that reduces the effort required to climb very high ladders.

WSDOT requires the use of fall protection equipment during bridge construction, bridge inspection, and other work activities where an employee can fall from elevated surfaces.

Refer to Chapter ??? for additional details.

### PPE Use and Maintenance

All PPE must be kept clean and in reliable condition. PPE that is damaged or deemed to be not safe, must be replaced. All employees are to be trained properly in the use, proper maintenance, and disposal of PPE.

Items, which are fitted to the individuals, shall not be reissued to other employees nor are they to be shared. Items that are owned by the employee and used on the job must be certified safe and reliable by WSDOT.

## **Section 3 - Training**

### Training

Training will be provided in the use of PPE. Employees will be trained in:

1. Hazard awareness
2. When PPE is necessary
3. How to don, remove, adjust, and wear PPE
4. Limitations of PPE
5. Proper care, maintenance, useful life, and disposal of PPE

Refresher training will be given annually. All employees must be trained before the specific PPE is put into use. No employee shall be at risk at any time without knowledge of the proper PPEs to reduce the risk. Additionally, supervisors will be trained in conducting hazard assessments to ensure the appropriate PPE is matched to the hazard.

## **Section 5 - Record keeping**

Document in writing that each employee using PPE has received and understood the required training. This documentation must include:

1. Name of each employee
2. Date(s) of training
3. Subject of the training

Documentation may be stored on a computer as long as it is available to safety and health personnel from the Department of Labor and Industries.

## **Section 6 - Tables & Appendices**

Appendix A **Hazard Assessment Form**

Appendix B **Hazard Analysis**

Appendix C **Eye and Face Protection Selective Chart**

Appendix D **Hand and Arm Protective Wear**

Appendix E **Job Classes in Risk Class 5307**

Appendix F **Designated Employees Exposure List**

## **Section 7 - Region Chapter Addendum's:**