

## **Chapter 5 Personal Protective Equipment (PPE)**

### **OVERVIEW:**

This chapter provides information about specific items and/or categories of personal protective equipment used to protect and shield you from injury or illness.

### **GENERAL GUIDELINES**

You will be provided with personal protective equipment to use whenever there is a possibility of exposure or injury.

### **NDOR provides the following equipment:**

- Hardhat and cap
- Leather work gloves
- Safety or Plano glasses with side shields
- Goggles for persons with prescription glasses
- The Department will furnish additional items of personal protective equipment as necessary.
- Disposable ear plugs
- Traffic safety vests

### **Your responsibilities:**

If your job requires, you must wear safety toe shoes beginning on the first day of work.

- Obtain PPE from your supervisor.
- Wear personal protective equipment when you are involved in a work activity that could cause injury, illness or exposure.
- Properly maintain your safety equipment.
- Report all defective PPE to your supervisor.

Only PPE conforming to recognized standards (ANSI, MSHA, NIOSH) will be selected and used. Do not substitute other PPE or supply your own. Your supervisors may purchase special PPE for a particular hazard at their own discretion or at your request.

- PPE is a temporary measure. If possible, correct hazards through design, engineering or other methods.
- When you are issued equipment for the first time or when new devices are introduced, your supervisors will provide training as to how and why the equipment should be used.

### **PROTECTIVE EYEWEAR**

You are responsible to wear eye protection during any work activity that may expose you to an eye injury. Eye protection includes safety glasses, goggles, and face shields.

Safety prescription glasses may be provided by NDOR with the supervisor's approval.

The Department will provide one pair of safety prescription glasses with side shields each time your prescription is changed, when you are required to wear safety prescription glasses. No more than one pair shall be provided in any twelve-month period unless the glasses are accidentally broken or severely scratched in the course of employment.

If you wear prescription glasses, the Department will furnish prescription safety glasses for you whose job requires eye protection.

To procure safety glasses with prescription lens, you will:

- Be furnished with a brochure showing the different frame styles and a special safety prescription form supplied by a vendor through your Division Head/District Engineer.

- Take this form to your optometrist for completion. If an examination has been received recently, your optometrist may fill out the form in lieu of another examination. The eye examination and dispensing fees are your responsibility.
- Forward the form when completed to Logistics Division.
- Check the prescription lens of your safety glasses for accuracy and have the prescribing optometrist or ophthalmologist fit the frames.
- Return safety glasses to the vendor through the Logistics Division if found unsatisfactory.

You are responsible for paying for “photo gray” or similar tinting of the prescription safety glasses if they exceed the clear.

If you are a temporary, part-time, or on probation, you are not eligible for furnished prescription safety glasses even though your job may require eye protection. Wear goggles over your prescription glasses for added protection.

If you are not eligible for furnished prescription safety glasses, you may purchase prescription safety glasses through the Department by contacting the Procurement Section of the Logistics Division.

Whenever you are wearing prescription safety glasses furnished by the Department, you will wear the side shields. Your prescription safety glasses are not considered safety glasses unless equipped with side shields and the glasses are identified as such.

Face shields may be used in conjunction with goggles or safety glasses. Green tinted face shields will not be used for welding and cutting operations unless they have a tint of five or six and are approved for welding and cutting operations. Face shields will be used when you are working with chemicals or performing battery-changing operations.

When to wear protective eyewear:

- Near flying particles, chips or dust; splashing liquids (including bodily fluids); bright flashes, glare, and heat.
- While driving any motorized equipment that is not equipped with an enclosure or cab.
- Eye protection will conform to ANSI Z87.1-1986 (R-1998) or most recent edition.

## **RESPIRATORY SELECTION, MAINTENANCE AND STORAGE**

**Respirator:** A device (supplied air or filter type) worn by persons for protection against breathing harmful vapors, gases, dust, fumes or mist. Respirators are provided for you to use when personal protection is required to prevent exposure to respiratory hazards. All respiratory protective equipment used shall meet the approval of the National Institute of Occupational Safety and Health (NIOSH).

**Your supervisor shall ensure that you are:**

- Given training in respirator care and use.
- Approved to use a respirator.
- Provided respirators and accompanying sanitary storage facilities.

There are different types of respirators. Some of these include dust masks, air-purifying negative-pressure respirators, and others. To determine the need for respiratory protection where a hazard may exist, the following factors are considered:

- Toxic or irritating characteristics of a contaminant.
- Physical state of contaminant (dust, mist, vapor or gas).
- Concentration of contaminant (determines if protection is needed or whether filter or supplied air).
- Skin absorption of a contaminant, gloves and protective garb properly selected may provide adequate protection.
- Anticipated exposure time (exposure concentration and time determine respirator type and service life).
- Skin and eye irritation.
- Work location - escape distance to safe atmosphere.
- Possibility of oxygen deficient atmosphere (supplied air required).
- Identity of contaminants (more than one may be present requiring special filters).

### **Inspection, Maintenance and Storage:**

- Clean and disinfect respirator as needed.
- Inspect the respirator equipment before and after each use.
- Immediately repair or replace respirators that fail inspection. Do not attempt to do more than recommended by the manufacturer.
- Store respirators as instructed during the training program and according to manufacturer's guidelines.

### **HEARING PROTECTION**

Hearing protection shall be used as required to protect you from noise when engineering controls cannot reduce the noise to acceptable levels. Protection against the effects of noise exposure shall be immediately available in those instances where the sound level exceeds 85 decibels.

When your work areas or specific job tasks have been designated as those requiring hearing protection, you must wear approved protective equipment. Personal stereos and headphones are not considered approved hearing protection. Your supervisor is responsible for identifying hearing protection, as well as providing training on the proper use of hearing protection equipment.

Disposable earplugs are the most common type and should be readily available.

Earmuffs are available for special situations and can be worn with plugs.

Certain work areas or tasks may be designated as requiring additional protective measures. If you have questions about high noise levels in your work area, you should ask your supervisor.

The **NOISE LEVEL** is an exposure to an 8 hour "Time Weighted Average" (TWA) of 85 decibels (dBA). Where controls are not feasible and the noise level exceeds 85 decibels (dBA), wear an approved form of hearing protection. Activities that require hearing protection include operating air tools, power chiseling and hammering. Hearing testing may be offered to identify effectiveness of hearing protection.

### **HARDHATS AND CAPS**

It is your responsibility to wear the Department-provided orange or yellow/green hardhat while working on or off the highway right of way when there is danger of head injury. Your supervisor may provide additional examples of when to wear a hardhat.

You are responsible for wearing hardhats during any work activity that may expose you to a head injury such as cutting or trimming trees, installing or repairing traffic signals, and storm damage cleanup. Hardhats will be immediately available for use so that as work conditions change protection is available. When a hardhat is not required, a Department approved cap will be worn. To protect you from the sun during the summer months, a full-brim hat may be worn in place of the standard NDOR baseball style cap, with the approval of your District Engineer or Division Head. The Department will reimburse you up to \$7 when you purchase the hats locally.

Specific activities, which are exempt from hat and hardhat requirements include:

- When you or your passengers are inside vehicle cabs or under a vehicle/equipment canopy.
- When you are physically operating the instrument on survey crews.

**While working on the railroad right of way**, you may wear orange or yellow/green hats and hardhats.

Head protection will conform to ANSI Z89.1-1989 or most recent edition.

### **SAFETY VESTS**

Safety vests must be worn in work areas and on construction projects that remain open to the traveling public.

A vest equipped with reflective material is the standard for ALL NDOR operations. The retroreflective clothing shall be designed to identify the wearer as a person and be visible through the full range of body motions. Orange or yellow/green vests must be worn while working in any situation where high visibility is necessary.

In wet weather, you may wear fluorescent rain gear provided by NDOR.

### **FALL PROTECTION**

Safety harnesses, lifelines and lanyards may be required to protect you from falling while working at heights of six (6) feet or more where you are not protected by standard guardrails or safety nets or as required when working in confined spaces.

- You will wear NDOR approved safety harness as the job requires.
- Safety belts will not be used.
- You must be trained in donning, doffing and using safety harnesses.
- Harnesses must be used with approved lanyard, which must be anchored on an approved anchor point.
- Equipment must be inspected twice a year.
- If used in a fall, the equipment cannot be used again until inspected and approved for use.

ANSI Z359.1, when updated in 2004, will cover a multitude of fall protection issues from training and fall arrest systems to rescue operations. Additional information on anchorage points, horizontal lifelines and rope access will be addressed.

### **FOOTWEAR**

**Safety boots/shoes** are required to protect you when working in areas where there is a danger of foot injuries due to falling or rolling objects, exposure to piercing the sole, or protection against electrical or chemical hazards. If the job requires foot protection, safety-toe shoes shall be worn. Such protection is required for, but not limited to, the following jobs:

- Road, yard, and building maintenance (temporary, part-time flaggers are exempt because you are to be used strictly for flagging).
- Construction inspection (include material sampling and testing on construction projects).
- Material sampling and testing (specific positions determined by the Division Head and Safety Coordinator).
- Warehouse operations.
- Sign shop operations.
- Equipment repair and service.
- Carpentry.

New employees who are required to wear safety-toe shoes will be required to do so on their first day of employment. This includes all types of employees, probationary, temporary and permanent, part time or full time.

NDOR will issue special boots/shoes only when required.

- Metatarsal shoe guards.
- Safety insoles as needed.

If you are not directly involved in the physical work of the job, you are exempt from wearing safety-toe boots/shoes. The following positions and/or work activity will always wear safety-toe boots/shoes even though not directly involved in the physical work of the job.

- Inspectors.
- Hard-sole shoes will be worn around bridge construction, culvert construction, and other areas where nails could puncture feet. Shoes with non-slip soles will be worn on slippery surfaces.

## **CLOTHING AND GLOVES:**

When using hazardous chemicals, specialized gloves offering protection against specific chemicals, a laboratory coat and at times a splash apron may be required PPE.

Insulated gloves and arm sleeve covers are recommended when handling hot or cold materials.

To reduce cut or abrasion injuries, use puncture or abrasion resistant gloves, arm sleeve covers and at times an apron.

Supervisors will furnish leather gloves to employees they determine need the gloves. Old worn gloves can be exchanged for a new pair.

If you want extra gloves or lose your gloves, you can purchase gloves from the Logistics Division.

The following are general guidelines in using gloves:

- Metal mesh or cut resistant gloves will prevent cuts from broken glassware, knives or sharp other objects.
- Leather gloves will prevent blisters, calluses, and abrasions. These gloves also protect against rough surfaces, sparks, and moderate heat.
- Cotton or other fabric gloves will protect against dirt and dust, or to better grasp slippery objects.
- Rubber, neoprene, vinyl, or nitrile gloves will protect against chemicals.
- Workers who are sensitive to natural rubber latex should avoid direct contact with latex gloves and other rubber products.
- Gloves should fit properly and be in good condition. They should cover your hands completely and be comfortable enough for you to perform your job.
- Take care to avoid contamination. Don't let your bare skin touch contaminated gloves.

## **SPECIAL PERSONAL SAFETY EQUIPMENT**

Neck shades, which can be attached to your caps, may be ordered from the Logistics Division on a DR Form 146, "Stock Requisition."

- Full-brim hats may be worn for protection against the sun. These hats must be orange or yellow/green and do not require the Department logo.
- When operating chain saws, protective chaps will be provided.
- Disposable gloves and coveralls are supplied for special work duties such as work around asbestos or other special circumstances.
- Wear approved DOR raingear when exposed to traffic.

If toxic or hazardous substances contaminate the coveralls, they will be kept separate from other clothing or personal type equipment to prevent cross-contamination.

Any questions regarding PPE should be directed to Human Resources through your immediate supervisor.