



July 16, 2009

To: Managers and Assistant Managers
From: Rudy Mejía, Assistant Director
Subject: Procedure – Fitting, Care and Use of Personal Protective Equipment (PPE)

The purpose of this procedure is to provide guidelines for the proper fitting, care and use of personal protective equipment (PPE).

General

PPE is the last line of defense for protecting workers. Safety and health hazards should be eliminated at the source (if possible) through administrative or engineering controls.

Clear requirements regarding the provision (including fitting), care and use of PPE and specialized PPE are to be effectively communicated by the supervisor to all affected employees.

Basic Requirements

Physical Plant has basic requirements for PPE. For example, all persons outside of office employees are required to wear:

- CSA Grade 1 Safety Footwear ("Green Tag" safety footwear)
- CSA Class G or Class E Hard Hat (when required)
- CSA Safety Glasses (when required)

Specialized Requirements

Additional PPE or Specialized PPE is required depending on the jobs performed and determined in each Work Unit. In some cases specialized PPE requires specific training and fitting as well as regular maintenance and inspection. In the Physical Plant such PPE includes:

- Safety and Traffic Vests
- Eye Protection
- Half Mask Air Purifying Respiratory
- Harnesses, Belts and Lanyards
- Hearing Protection

Specific Guidelines

The following specific guidelines are not meant to replace specific instruction received in a workshop setting. Nor are they meant to cover all PPE used in Physical Plant. You may need to refer to the instructions provided by individual manufacturers.

Regular maintenance and inspection requirements (specified by the various manufactures) are to be followed and a log book maintained in each Work Unit.

A pre-job hazard assessment will assist in identifying the need for specific specialized personal protective equipment.

Attachment

CSA Grade 1 Safety Footwear ("Green Tag" safety footwear)*

What should I know about safety footwear?

- If you are at risk for foot injury at your workplace, you should wear the appropriate protective footwear.
- If foot protection is required, set up a complete foot safety protection program including selection, fit testing, training, maintenance and inspection.
- Safety footwear is designed to protect feet against a wide variety of injuries. Impact, compression, and puncture are the most common types of foot injury.
- Choose footwear according to the hazard. Refer to CSA Standard Z195-02 "Protective Footwear" (Reaffirmed 2007).
- Select CSA-certified footwear. Ensure that it has the proper rating for the hazard and the proper sole for the working conditions.
- Use metatarsal protection (top of the foot between the toes and ankle) where there is a potential for injury.

What should I know about the fit and care of safety footwear?

Fit

- Walk in new footwear to ensure it is comfortable.
- Boots should have ample toe room (toes should be about 12.5 mm from the front)
- Make allowances for extra socks or special arch supports when buying boots.
- Boots should fit snugly around the heel and ankle when laced.
- Lace up boots fully. Use small loops in order that the laces do not catch on anything. High-cut boots provide support against ankle injury.

Care

- Use a protective coating to make footwear water-resistant.
- Inspect footwear regularly for damage.
- Repair or replace worn or defective footwear.
- Electric shock resistance of footwear is greatly reduced by wet conditions and with wear.

CSA Class G or Class E Hard Hat*

What should I know about head protection?

- If you are at risk for head injury at your workplace, you should wear the appropriate head protection.
- If head protection is required, establish a complete safety protection program including selection, fit testing, training, maintenance and inspection.
- Choose the correct headwear for the job. Refer to CSA Standard Z94.1(M1977 or -92), "Industrial Protective Headwear" or the legislation that applies in your jurisdiction.

Classes of headwear can include:

- Class G: General Usage (non-conducting)
- Class E: Electrical Trades (non-conducting)
- Class C: Conducting

- Headwear consists of a shell and the suspension. These work together as a system and both need regular inspection and maintenance.
- Do not transport headwear in rear windows of vehicles.
- Inspect headwear before each use.
- Do not draw the chin strap over the brim or peak of the headwear.
- Do not wear headwear backwards (the peak should always face forwards).

What should I know about the shell of my headwear?

- The shell is rigid and light, and is shaped to deflect falling objects. Correct maintenance is important.

DO

- Inspect and replace a shell that shows signs of wear, scratches or gouges. Shells exposed to heat, sunlight and chemicals can become stiff or brittle. A visible pattern of tiny cracks may develop. Over time, weathered hats can become dull in colour or have a chalky appearance.
- Replace headwear when hairline cracks start to appear.
- Replace headwear that has been struck, even if no damage is visible.
- Remove and destroy any headwear if its protective abilities are in doubt.

DO NOT

- Do not drill holes, alter or modify the shell. Alterations may reduce the protection provided by the headwear.
- Do not paint the plastic shell. Paint solvents can make plastic headwear brittle and more susceptible to cracks. Paint can also hide cracks that may develop. Instead, use reflective marking tape to make numbers or symbols for identification purposes. Metal headwear may be painted.
- Do not use winter liners that contain metal or electrically conductive material under Class G or E headwear.
- Do not use metal labels on Class G or E headwear.

What should I know about the suspension of my headwear?

- The suspension system is as important as the shell. It holds the shell away from the head and acts as a shock-absorber. It also holds the shell in place on the head and allows air to flow freely.
- Adjust headband size so that headwear will stay on when the wearer is bending over, but not so tight that it leaves a mark on the forehead.
- Ensure that the suspension is in good condition. The main purpose of the suspension is to absorb energy.
- Look closely for cracked or torn adjustment slots, frayed material or other signs of wear.
- Check the suspension lugs carefully. Long periods of normal use can damage the suspension. Perspiration and hair oils can speed up the deterioration of suspension materials.
- Replace the suspension if it has torn or broken threads.
- Do not put anything between the suspension and the shell. There must be a clearance inside the headwear while it is being worn. In case of a blow to the head, that space helps absorb the shock.

What should I know about maintenance?

- The care and maintenance of headwear are needed if the headwear is to protect as designed. Its lifespan is affected by normal use and by heat, cold, chemicals and ultraviolet rays.
- Clean the suspension and shell regularly according to the manufacturers' instructions.

Safety and Traffic Vests **

- Precautions should be taken to store vests away from prolonged exposure to sunlight, fluorescent lights and other sources of ultraviolet radiation.
- Keep vests clean.
- When soiled, wash vests in warm water and mild soap. Do not bleach. Rinse thoroughly in clear water. Hang to dry in the open air.

Eye Protection**

- Safety Glasses
- Standard industrial safety glasses look very much like normal glasses, but are designed to provide the wearer with impact protection against flying particles.
- Lenses are made from impact resistant plastic or polycarbonate. Glass lenses are not CSA approved.
- Ensure the safety glasses fit properly. Eye size, bridge size and temple length all vary, so safety glasses need to be individually assigned and fitted.
- Wear the safety glasses so that the temples fit comfortably over the ears. The frame should be as close to the face as possible and adequately supported by the bridge of the nose.
- Clean your safety glasses frequently. Follow the manufacturer's instructions. Avoid rough handling with can scratch lenses. Scratched impair vision and can weaken lenses.
- Replace scratch, pitted, broken, bent or ill-fitting glasses. Damaged glasses interfere with vision and do not provide adequate protection.

- Safety Goggles

- Many types of specialty goggles are being manufactured today as no one type will protect against every conceivable hazard likely to be encountered.
- This type of protective eye wear is designed to fit snugly around the eyes and provide a tighter seal around the eyes as compared to safety glasses.
- Most brands are certified to provide impact penetration in addition to the protection from foreign objects such as dust and dirt.
- Manufacturers generally offer these types of goggles with direct or indirect ventilation. Ensure that the vents are clear from obstruction. Indirect ventilation may be required if you are exposed to chemical splash hazards, corrosive or reactive dusts. Also available are scratch and fog resistant lenses and tints.
- Clean your safety goggles frequently. Follow the manufacturer's instructions.

- Face Shield

- Face shields are **not** in themselves protective eye wear. They are frequently used in conjunction with other eye wear to provide additional full face protection against flying particles, heat, chemical or molten materials.
- Face shields alone **do not** provide adequate eye protection. For this reason they are often referred to as **secondary protectors** as opposed to safety glasses or impact goggles which are referred to as **primary protectors**. Both types are often required to perform some jobs safely.
- Clean your face shield frequently. Follow the manufacturer's instructions.

Half Mask Air Purifying Respiratory***

(Refer to North Safety Products "5500 & 7700 Series half Mask Air Purifying Respirator Operating and Maintenance Instruction Manual" for more comprehensive instruction.)

- **Fit Testing:** A respirator should not be assigned to a person unless the person is given a fit test by EHSO. Fit tests should be conducted annually and more frequently if there are factors such as weight change or dental surgery which may affect the fit of the respirator.
- **Periodic Seal Checks:** Each time that the respirator is put on, before entering an area containing hazardous atmospheres, and periodically while wearing the respirator in the contaminated area, the respirator wearer should check the effectiveness of the seal.
- **Inspection:** Visually inspect all components for damage or wear, especially rubber part. Replace parts where needed. If needed, clean and sanitize the face piece assemble.
- **Filters:** Ensure that they are changed regularly.
- **Putting on the respirator:**
 - Remove your eye wear (if worn)
 - Position the narrow portion of the respirator on your nose bridge and place the cradle suspension system on your head so that the top headband rests across the top of your head and the bottom headband rests above your ears, on the back of your head. Then hook the bottom headband behind your neck, below your ears, and adjust the position of the face piece on your face.

- Adjust the headbands.
- Removing the respirator: Loosen the headbands and remove the face piece.
- Storage: Store in a clean dry area in the respirator storage bag provided.

Harnesses, Belts and Lanyards****

(Refer to Tractel Ltd "Use and maintenance instructions" contained in every harness package for more comprehensive instruction.)

- Ensure you follow the limitation of the equipment as specified by the manufacturer.
- Inspection: All equipment must be inspected visually before each use and periodically. Failure to remove equipment that has been damaged or has questionable condition could lead to serious or fatal injury.
- Chemical hazards: Nylon will degrade around strong acids and phenolic compounds.
- Paint can penetrate into the weave and dry, causing the webbing to become hard, brittle and eventually break the fibers.
- Contact with sharp edges or abrasive surfaces should be avoided.
- Sunlight: All organic fibers, either natural or man-made will degrade to various degrees from exposure to ultraviolet light. Precautions should be taken to store the equipment away from prolonged exposure to sunlight, fluorescent lights and other sources of ultraviolet radiation.
- Cleaning: Harnesses, belts and lanyards can be washed with a solution of cold water and mild detergent. After washing, they must be thoroughly rinsed with clear water and hung up to dry out of the sun and away from exposure to high heat.

Hearing Protection*****

- Care
- Dispose of single-use earplugs daily
- Clean multiple-use earplugs with mild soap and water, dry thoroughly
- Inspect multiple-use earplugs for dirt, cracks or hardness, replace if damaged.
- Earmuffs
- Clean ear cushions and headband regularly with mild soap and water
- Replace ear cushions and foam inserts every 6 months with normal wear, and more often with heavy use or under humid/extreme conditions.
- Protection
- Maximum protection is only accomplished when an earplug acoustically seals in the ear canal.
- No earplug fits all ear canals, so manufacturers have responded with a variety of sizes.
- It is important to find your right size to obtain an acoustic seal.

- Fitting: Roll-down Foam Earplug
- Roll entire earplug into a crease-free cylinder
- Pull back pinna by reaching over head with free hand, gently pull top of ear up and out
- Insert earplug well into ear canal and hold until it fully expands

- Fitting: No-roll Foam Earplug
- Reach over head with free hand, pull ear up and back and insert earplug well inside ear canal.
- Stop pushing earplug when finger touches the ear.
- If properly fitted, the end of the earplugs should not be visible to someone looking at you from the front.

- Fitting: Multiple-use Earplugs
- While holding the stem, reach hand overhead and gently pull top of ear up and back.
- Insert earplug so all flanges are well inside the ear canal.
- If properly fitted, only the stem of the earplugs should be visible to someone looking at you from the front.

- Acoustical Check: Cup hands over ears and release. Earplugs should block enough noise so that covering your ears with hands should not result in a significant noise difference.

- Earmuff Instructions
- For best results, remove all hair from underneath earcup.
- Ensure that the earcup creates a seal and covers the ear completely.
- Place earcups over each outer ear.
- Adjust the headband by sliding the headband up or down at the attachment buttons
- The ear cushions should seal firmly against the head.

References

- * Canadian Centre for Occupational Health & Safety website, "Personal Protective Equipment"
- ** Construction Safety Association of Manitoba website "Toolbox Talks."
- *** North Safety Products "5500 & 7700 Series Half mask Air Purifying Respirator Operating and Maintenance Instruction Manual."
- **** Tractel Ltd "Harnesses, belts & lanyards: Use and maintenance instructions."
- ***** Howard Leight Bilsom Workshop Presentation on Hearing Protection