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Personal Protective Equipment

Be sure to select the appropriate PPE to reduce work injuries

The objective of Personal Protective Equipment is to protect employees from injury through its use—such as safety glasses to protect their eyes, hardhats to protect their heads or boots to protect their feet.

To ensure appropriate protection for your employees, follow these standards. In Minnesota the PPE standard requires employers to:

- **Conduct an assessment** of the workplace to determine whether hazards are present that make the use of PPE necessary.
- **Select appropriate PPE** that will protect affected employees from the hazards identified in the assessment.
- **Train employees** on what PPE is required and how to use, adjust and maintain it.

See MN OSHA standard 1910.132139 for more specifics.

In other states not regulated by a state-level OSHA, employers are not required to have an PPE program, but having one is a good idea. Selecting the appropriate PPE can be tricky. Begin with the following criteria:

- PPE must protect against the specific hazard encountered in the workplace.
- PPE must be reasonably comfortable.
- PPE must not restrict the senses, movement or ability to work safely.
- PPE must be durable and easy to clean and disinfect.
- PPE must not interfere with the function of other required PPE.

Here are some tips to help you select the appropriate PPE for your employees.

Eye protection 

Eye protection should be used when employees are exposed to flying particles, molten metal, acids or caustic liquids, chemical liquids, gases or vapors, bioaerosols or light radiation.

Follow these rules of thumb:

- Contact lens wearers must also wear appropriate eye and face protection in hazardous environments.
- Side protectors must be used when there is risk of flying objects.
- Goggles and face shields must be used when there is risk of chemical splashes.
- Face shields must be worn over primary eye protection such as safety glasses or goggles when the situation requires.
- Prescription lens wearers must either incorporate the prescription into their PPE design or it should fit properly over the prescription lenses.
- Equipment fitted with appropriate filter lenses should be used to protect against light radiation. Tinted and shaded lenses are generally not filter lenses.

Types of eye protection.

- **Safety glasses.** Made with safety frames constructed of metal or plastic and are fitted with either corrective or impact-

resistant lenses. They come with and without side shields, but most workplace operations require side shields.

- **Impact-resistant glasses.** Can be used for moderate impact from particles produced by such jobs as carpentry, woodworking and grinding.
- **Side shields.** Protect against particles that might enter the eyes from the side. Eye-cup side shields provide the best protection.
- **Goggles.** Choose from many types of goggles, each designed for specific hazards. Generally, goggles protect eyes, eye sockets and the facial areas immediately surrounding the eyes from impact, dust and splashes. Some goggles fit over prescription lenses.
- **Welding shields.** Constructed of vulcanized fiber or fiberglass and fitted with a filtered lens. Welding shields protect employees' eyes from burns caused by infrared or intense radiant light and protect the face and eyes from flying sparks, metal spatter and slag chips.
- **Laser safety goggles.** Provide a range of protection against the intense concentrations of light produced by lasers. The type you choose depends on the equipment and conditions in your workplace.
- **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 splashes or sprays of liquids.

It is important a that emergency eyewash facilities are available in areas where the eyes of any employee may be exposed to corrosive materials.

Head protection

Head injuries are not the most commonly reported work accident, but are by far among the most devastating. One serious blow to the head can leave an employee disabled for life.

Head protection should be provided if:

- Objects might fall from above and strike employees on the head.
- Employees might bump their heads against fixed objects, such as exposed pipes.
- Employees work near exposed electrical conductors.

Follow these rules of thumb. 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 headband.

Types of head protection.

Each kind of protective helmet is designed to protect against specific hazards.

- **Hard hats.** As their name suggests, they are made of rigid, impact-resistant, non-flammable materials. The shell is held on the head by a network of straps and harnesses, which fit over the head itself and cushion impact. Hard hats are divided into three industrial classes:
  - *Class A.* For general service. They provide good impact protection, but limited voltage protection. They are used mainly in mining, construction, shipbuilding, lumbering and manufacturing.
  - *Class B.* For your employees who do electrical work. They protect against falling objects and high-voltage shock and burns.
  - *Class C.* These lightweight helmets

offer comfort, but limited protection. They protect workers if they bump against fixed objects, but do not protect against falling objects or electric shock.

- **Bump caps.** Do not protect against blows to the head or other serious impacts such as from falling objects. Made of lightweight plastic, these protect against minor bumps only. Bump caps should never be used in place of hard hats. Bump caps are commonly used when working in confined spaces where there are no serious head hazards.
- **Hair covers.** Made of breathable, lightweight materials, are often required when working around machinery. This type of headwear is usually adjustable and may have a front visor to let employees know when they get too close to the machine. Hair covers help prevent hair from becoming caught in moving machine parts.

Although these are the most common types of protective headwear, the particular tasks your employees do may require that special safety accessories be added to the basic protector. For example, a thermal liner may be required if your employees work in extremely cold temperatures or lamp brackets may be attached if work areas are dark.

Foot protection

You must provide foot and leg protection for employees faced with the following hazards:

- 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 shoes.
- Molten metal that might splash.
- Hot, wet or slippery surfaces.

Types of foot protection.

The type of foot and leg protection you provide your employees depends upon the specific workplace hazards and the specific parts of the feet or legs exposed to potential injury.

- **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.** Made of steel, aluminum or plastic, these guards fit over the toes of regular shoes and protect only the toes from impact and compression hazards.
- **Combination foot and shin guards.** These guards may be used in combination with toe guards when greater protection is needed.
- **Safety 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 may protect against puncture wounds. Safety shoes may also be electrically conductive to prevent the buildup of static electricity or nonconductive to protect workers from workplace electrical hazards.

Hand protection

Suitable gloves should be worn when chemicals and harmful temperature are present or when employees are at risk for cuts, lacerations, abrasions, punctures or burns. Glove selection should be based on performance characteristics of the gloves, conditions, durations of use and hazards present. One type of glove will not work in all situations.

The first step in glove selection for use against chemicals is to determine the exact nature of the substances. Read instructions and warnings on chemical container labels and

Material Safety Data Sheets before working with any chemical. Recommended glove types are often listed on such labels in the PPE section.

Types of hand protection.

Gloves can be divided into three groups:

- **Durable work gloves.** Made of metal mesh, leather or canvas and provide protection against cuts, burns and sustained heat. Leather gloves protect against sparks, moderate heat, blows, chips and rough objects. Welders specifically should use leather gloves.
- **Fabric and coated fabric gloves.** Made of cotton or other fabrics to provide varying degrees of protection. They can protect against dirt, slivers, chafing and abrasion. Fabric gloves do not provide sufficient protection for working with rough, sharp or heavy material. However, adding a plastic coating to some fabric gloves strengthens them and makes them effective protection for a variety of tasks ranging from handling bricks and wire rope to handling chemical containers in laboratory operations.
- **Chemical and liquid resistant gloves.** Made of rubber, plastic or synthetic rubber-like material, they 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.

Remember, work gloves cannot prevent all hand injuries—only safe work practices can do that.

Body protection

You must provide your employees body protection if they are at risk for bodily injury caused by: intense heat, hazardous chemicals, splashes of hot metals and liquids, impacts from tools, machinery and materials, and contact with potentially infectious materials such as blood and radiation.

Types of body protection.

Protective clothing my include:

- Vests.
- Jackets.
- Aprons.
- Coveralls.
- Surgical gowns.
- Full body suits.

Protective clothing comes in a variety of materials, each suited to particular hazards. Materials for protective clothing include:

- **Paper-like fiber.** Disposable suits made of this material provide protection against dust and splashes.
- **Treated cotton and wool**. Adapts well to changing temperatures, is comfortable and fire-resistant. Protects against dust, abrasions and rough and irritating surfaces.
- **Duck.** Protects employees against cuts and bruises while handling heavy, sharp or rough materials.
- **Leather.** Leather protective clothing is often used against dry heat and flame.
- **Rubber and plastics.** Protects against certain acids and other chemicals.

For specific questions regarding Personal Protective Equipment use or for assistance developing your PPE program, call your SFM Loss Prevention representative at (952) 838-4200 or (800) 937-1181.

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