



# A HANDY GUIDE TO ESSENTIAL PPE





# PROTECTING YOUR EMPLOYEES FROM WORKPLACE HAZARDS

## A HANDY GUIDE TO ESSENTIAL PPE

**BROUGHT TO YOU BY 95 TRAFFIC SAFETY SUPPLY.  
TOGETHER, WE MAKE WORK ZONES SAFE!**

Hazards exist in every workplace in many different forms: sharp edges, falling objects, flying sparks, chemicals, noise and many other potentially dangerous situations.

For this reason, the Occupational Safety and Health Administration (OSHA) requires that employers protect their employees from workplace hazards that can cause injury.

While some hazards can be controlled at their source through the use of barriers and other measures, it's not always possible to take this step. That's why it's essential for all employees on your jobsite to be equipped with Personal Protective Equipment (PPE) where appropriate.





# CREATING A SAFE AND HEALTHY WORK ENVIRONMENT

To ensure the greatest possible protection for employees in the workplace, both employers and employees need to help establish and maintain a safe and healthy work environment.

Therefore, **employers** should:

- perform a thorough 'hazard assessment' of the workplace to identify and control physical and health hazards;
- identify and provide appropriate PPE for employees;
- train employees in the use and care of the PPE;
- maintain PPE, including replacing worn or damaged PPE;
- periodically review, update and evaluate the effectiveness of the PPE program.

And **employees** should:

- properly wear PPE;
- attend training sessions on PPE;
- care for, clean and maintain PPE;
- inform a supervisor of the need to repair or replace PPE.



## SELECTING PPE

All PPE clothing and equipment should be of **safe design and construction**, and should be kept **clean and in good working order** to ensure its reliability. The **fit and comfort** of PPE is equally important - PPE that fits well and is comfortable is much more likely to be used.

**NOTE: OSHA requires that many categories of PPE meet or be equivalent to standards developed by the American National Standards Institute (ANSI).**

## THE MOST COMMON FORMS OF PPE

These are the most common forms of PPE that you are likely to need on every worksite, depending on the nature of the work at hand.

### EYE AND FACE PROTECTION

Every worker should take every necessary precaution to protect their eyes. OSHA equires employers to ensure employees have **appropriate eye or face protection on jobsites**. This protects workers from multiple hazards, including flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, potentially infected material or potentially harmful light radiation.





## TYPES OF EYE AND FACE PROTECTION

Each type of protective eyewear is designed to protect against **specific hazards**. Employers can identify the **specific workplace hazards** that threaten employees' eyes and faces by completing a proper **hazard assessment**.

Some of the **most common** forms of eye and face protection include:

**Safety spectacles.** These protective eyeglasses have safety frames constructed of metal or plastic and impact-resistant lenses. Side shields are available on some models.

**Goggles.** These are tight-fitting eye protection that completely cover the eyes, eye sockets and the facial area immediately surrounding the eyes and provide protection from impact, dust and splashes. Some goggles will fit over corrective lenses.

**Welding shields.** Constructed of vulcanized fiber or fiberglass and fitted with a filtered lens, welding shields protect eyes from burns caused by infrared or intense radiant light; they also protect both the eyes and face from flying sparks, metal spatter and slag chips produced during welding, brazing, soldering and cutting operations.

**NOTE: OSHA requires filter lenses to have a shade number appropriate to protect against the specific hazards of the work being performed in order to protect against harmful light radiation.**

**Laser safety goggles.** These specialty goggles protect against intense concentrations of light produced by lasers. The type of laser safety goggles you'll need will depend upon the equipment and operating conditions in the workplace.



**Face shields.** These transparent sheets of plastic extend from the eyebrows to below the chin and across the entire width of the employee's head. Some are polarized for glare protection. Face shields protect against nuisance dusts and potential splashes or sprays of hazardous liquids but will not provide adequate protection against impact hazards. Face shields used in combination with goggles or safety spectacles will provide additional protection against impact hazards.

## HEAD PROTECTION

Protecting employees from potential head injuries is a key part of any safety program as a head injury can be fatal or impair an employee for life. Wearing a safety helmet or hard hat is one of the easiest ways to protect an employee's head from injury. Hard hats are divided into three industrial classes:

**Class A** hard hats provide impact and penetration resistance along with limited voltage protection (up to 2,200 volts).

**Class B** hard hats provide the highest level of protection against electrical hazards, with high-voltage shock and burn protection (up to 20,000 volts). They also provide protection from impact and penetration hazards by flying/falling objects.

**Class C** hard hats provide lightweight comfort and impact protection but offer no protection from electrical hazards.





A proper fit for a hard hat is critical. It should allow sufficient clearance between the shell and the suspension system for ventilation and distribution of an impact. The hat should not bind, slip, fall off or irritate the skin.

Periodic cleaning and inspection will extend the useful life of protective headgear. Daily inspection of the hard hat shell, suspension system and other accessories for holes, cracks, tears or other damage that might compromise the protective value of the hat is essential.

**NOTE: Paints, paint thinners and some cleaning agents can weaken the shells of hard hats and may eliminate electrical resistance. Hard hats with the following defects should be removed from service or replaced:**

- **Perforation, cracking, or deformity of the brim or shell;**
- **Indication of exposure of the brim or shell to heat, chemicals or ultraviolet light and other radiation (in addition to a loss of surface gloss, such signs include chalking or flaking).**



## FOOT AND LEG PROTECTION

Employees who face possible foot or leg injuries from falling or rolling objects or from crushing or penetrating materials should wear protective footwear.

Also, employees whose work involves exposure to hot substances or corrosive or poisonous materials must have protective gear to cover exposed body parts, including legs and feet. If an employee's feet may be exposed to electrical hazards, non-conductive footwear should be worn.

**NOTE: Safety footwear must meet ANSI minimum compression and impact performance standards in ANSI Z41-1991 (American National Standard for Personal Protection-Protective Footwear) or provide equivalent protection.**

Foot and leg protection choices include the following:

**Safety shoes** have impact-resistant toes and heat-resistant soles that protect the feet 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 build-up of static electricity in areas with the potential for explosive atmospheres or nonconductive to protect employees from workplace electrical hazards.

**Toe guards** fit over the toes of regular shoes to protect the toes from impact and compression hazards. They may be made of steel, aluminum or plastic.

**Leggings** protect the lower legs and feet from heat hazards such as molten metal or welding sparks. Safety snaps allow leggings to be removed quickly.







## HAND AND ARM PROTECTION

Potential hazards to hands and arms include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures and amputations.

Protective equipment includes gloves, finger guards and arm coverings or elbow-length gloves.

### **Types of gloves include: Leather, Canvas or Metal Mesh Gloves.**

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

**Leather gloves** protect against sparks, moderate heat, blows, chips and rough objects.

**Aluminized gloves** provide reflective and insulating protection against heat and require an insert made of synthetic materials to protect against heat and cold.

**Aramid fiber gloves** protect against heat and cold, are cut and abrasive-resistant and wear well.

**Synthetic gloves** offer protection against heat and cold, 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

**Fabric and coated fabric gloves are made of cotton or other fabric to provide varying degrees of protection.**

**Fabric gloves** protect against dirt, slivers, chafing and abrasions. They do not provide sufficient protection for use with rough, sharp or heavy materials. Adding a plastic coating will strengthen some fabric gloves.

**Coated fabric gloves** are normally made from cotton flannel with napping on one side. By coating the non-napped 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 to chemical laboratory containers.

## Chemical and Liquid-Resistant Gloves

**Chemical-resistant gloves are made with different kinds of rubber: natural, butyl, neoprene, nitrile and fluorocarbon (viton); or various kinds of plastic: polyvinyl chloride (PVC), polyvinyl alcohol and polyethylene.**

**Butyl gloves** are made of a synthetic rubber and protect against a wide variety of chemicals, such as peroxide, rocket fuels, highly corrosive acids (nitric acid, sulfuric acid, hydrofluoric acid and red-fuming nitric acid), strong bases, alcohols, aldehydes, ketones, esters and nitrocompounds.

**Natural (latex) rubber gloves** are comfortable to wear, which makes them a popular general-purpose glove. They feature outstanding tensile strength, elasticity and temperature resistance.





**Neoprene gloves** are made of synthetic rubber and offer good pliability, finger dexterity, high density and tear resistance. They protect against hydraulic fluids, gasoline, alcohols, organic acids and alkalis.

**Nitrile gloves** are made of a copolymer and provide protection from chlorinated solvents such as trichloroethylene and perchloroethylene.

## **BODY PROTECTION**

Employees who face possible bodily injury of any kind that cannot be eliminated through engineering, work practice or administrative controls, must wear appropriate body protection while performing their jobs. In addition to cuts and radiation, the following are examples of workplace hazards that could cause bodily injury:

- Temperature extremes;
- Hot splashes from molten metals and other hot liquids;
- Potential impacts from tools, machinery and materials;
- Hazardous chemicals.

There are many varieties of protective clothing available for specific hazards. Employers are required to ensure that their employees wear personal protective equipment only for the parts of the body exposed to possible injury. Examples of body protection include laboratory coats, coveralls, vests, jackets, aprons, surgical gowns and full body suits.



## HEARING PROTECTION

Determining the need to provide hearing protection for employees can be challenging. Employee exposure to excessive noise depends upon a number of factors, including:

- The loudness of the noise as measured in decibels (dB).
- The duration of each employee's exposure to the noise.
- Whether employees move between work areas with different noise levels.
- Whether noise is generated from one or multiple sources.

**NOTE: Generally, the louder the noise, the shorter the exposure time before hearing protection is required. For instance, employees may be exposed to a noise level of 90 dB for 8 hours per day (unless they experience a Standard Threshold Shift) before hearing protection is required. On the other hand, if the noise level reaches 115 dB hearing protection is required if the anticipated exposure exceeds 15 minutes.**

### Some types of hearing protection include:

**Single-use earplugs** are made of waxed cotton, foam, silicone rubber or fiberglass wool. They are self-forming and, when properly inserted, they work as well as most molded earplugs.

**Pre-formed or molded earplugs** must be individually fitted by a professional and can be disposable or reusable. Reusable plugs should be cleaned after each use.

**Earmuffs** require a perfect seal around the ear. Glasses, facial hair, long hair or chewing gum may reduce the protection earmuffs provide.





## FURTHER READING

OSHA provides a great deal of information on PPE. We recommend you make full use of their resources to fully understand the PPE requirements.

To find out more, visit [www.osha.gov/personal-protective-equipment](https://www.osha.gov/personal-protective-equipment)

To get the full version of the information contained here from OSHA, please [click here](#)