



## Personal protective equipment

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### Real life

“I’m tired of trying to see through these fogged-up safety glasses,” John said to himself. “And, I’ve never had anything hit them anyway.” Unfortunately, it only took once for John to suffer a permanent eye injury.

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### Summary

Personal protective equipment, commonly referred to as “PPE,” is equipment worn to minimize exposure to a variety of hazards when engineering and work practice controls are not feasible or effective in reducing the exposure to acceptable levels. Examples of PPE include such items as safety glasses, gloves, steel-toe shoes, ear plugs, hard hats, respirators, and full body suits.

### Why it’s important to supervisors

Ensuring workers wear PPE when needed is something that the supervisor can do most effectively. You are there all the time and you can hold workers accountable. So, you need to understand the types of PPE, know the basics of conducting a “hazard assessment,” select appropriate PPE for a variety of circumstances, and understand what kind of training is needed in the proper use and care of PPE.

### OSHA regulations

29 CFR 1910.132 - General requirements; 29 CFR 1910.133 - Eye and face protection; 29 CFR 1910.134 - Respiratory protection; 29 CFR 1910.135 - Head protection; 29 CFR 1910.136 - Occupational foot protection; 29 CFR 1910.137 - Electrical protective devices; 29 CFR 1910.138 - Hand Protection. (These are the general requirements regarding PPE; specific requirements for PPE are presented in many different OSHA standards).

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## The basics

While both the supervisor and employees have responsibilities when it comes to PPE, there are certain activities that the supervisor (or in some instances, the safety manager) are responsible for. These include:

- Performing a “hazard assessment” of the workplace to identify and control physical and health hazards;
- Identifying and providing appropriate PPE for workers;
- Training workers in the use and care of the PPE;
- Maintaining PPE, including replacing worn or damaged PPE; and
- Periodically reviewing, updating, and evaluating the effectiveness of the PPE program.

## The hazard assessment

A first critical step in developing a comprehensive safety and health program is to identify physical and health hazards in the workplace. This process is known as a PPE “hazard assessment.” Depending on your company’s practices and structure, you may have a great deal of involvement in the hazard assessment, or you may serve an advisory role to the safety manager. Either way, you need to understand the reason for the hazard assessment and the basics of performing the assessment.

A comprehensive hazard assessment aims to locate potential physical or health-related hazards that necessitate the use of PPE. Examples of physical hazards include moving objects, fluctuating temperatures, high intensity lighting, rolling or pinching objects, electrical connections, and sharp edges. Examples of health hazards include overexposure to harmful dusts, chemicals, or radiation.

The hazard assessment should begin with a walk-through survey of the facility to develop a list of potential hazards in the following basic hazard categories: impact, penetration, compression (roll-over), chemical, heat/cold, dust, light (optical) radiation, and biologic.

In addition to noting the basic layout of the facility and reviewing any history of occupational illnesses or injuries, things to look for during the walk-through survey include:

- Sources of electricity
- Sources of motion such as machines or processes where movement may exist that could result in an impact between personnel and equipment
- Sources of high temperatures that could result in burns, eye injuries, or fire
- Types of chemicals used in the workplace
- Sources of harmful dusts
- Sources of light radiation, such as welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- The potential for falling or dropping objects
- Sharp objects that could poke, cut, stab, or puncture
- Biologic hazards such as blood or other potentially infected material

When the walk-through is complete, you and/or the safety manager should organize and analyze the data so that it may be efficiently used in determining the proper types of PPE required at the worksite and should become aware of the different types of PPE available and the levels of protection offered.

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### Supervisor tip

It is a good idea to select PPE that will provide a level of protection greater than the minimum required to protect workers from hazards.

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The workplace should be periodically reassessed for any changes in conditions, equipment, or operating procedures that could affect occupational hazards. This periodic reassessment should also include a review of injury and illness records to spot any trends or areas of concern and taking appropriate corrective action. The suitability of existing PPE, including an evaluation of its condition and age, should be included in the reassessment.

Documentation of the hazard assessment is required through a written certification.

### Selecting PPE

All PPE clothing and equipment should be of safe design and construction, and should be maintained in a clean and reliable fashion. Employers should take the fit and comfort of PPE into consideration when selecting appropriate items for their workplace. PPE that fits well and is comfortable to wear will encourage worker use.

Most protective devices are available in multiple sizes and care should be taken to select the proper size for each worker. If several different types of PPE are worn together, make sure they are compatible.

If PPE does not fit properly, it can make the difference between being safely covered or dangerously exposed. It may not provide the level of protection desired and may discourage worker use.

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### Supervisor tip

Make sure equipment such as safety glasses, foot protection, and hard hats, meet the appropriate American National Standards Institute (ANSI) standard. This will be marked on the PPE.

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### Training

Employers are required to train each worker who must use PPE. Workers must be trained to know why and what PPE is necessary; how to put it on, adjust, and remove it; the limitations of the PPE; and proper care, maintenance, and useful life of the PPE.

You should make sure that each worker demonstrates an understanding of the PPE training as well as the ability to properly wear and use PPE before they are allowed to perform work requiring the use of the PPE.

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## Supervisor tip

If you believe that a previously trained worker is not demonstrating the proper understanding and skill level in the use of PPE, that worker should receive retraining.

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If there are changes in the workplace or in the type of required PPE, workers may need retraining.

The employer must document the training of each worker required to wear or use PPE by preparing a certification containing the name of each worker trained, the date of training, and a clear identification of the subject of the certification.

The text so far in this chapter is focused on points that apply to PPE in general. Following are some key points for some specific types of PPE.

## Eye protection

- Many causes of eye injuries: Gases, vapors, liquids; flying objects/particles; lasers; electric arcing/sparks; splashing metals; heat; ultraviolet and infrared rays.
- Machine guards and screens should be used where feasible and should never be removed from equipment.
- Numerous types of eye protection: Safety glasses and goggles most common.
- Eye and face protection must be marked “Z87” to show that it has been approved.
- Face shields should only be used in conjunction with other eye protection, such as safety glasses or goggles.
- Eye protection should be cleaned regularly. Follow the manufacturer’s recommendations or use mild soap and warm water. Strong solvents can damage the lenses.
- Contacts are not a substitute for eye protection.
- Special lenses are required to shield eyes from radiation and glare. Most ordinary sunglasses do not provide the right glare protection.

