

Before you begin

- Obtain a copy of your company's personal protective equipment (PPE) assessment and related policies.
- Gather samples of typical eye protection used in your operations for demonstration purposes.
- Be ready to explain which types of eye/face protection must be used in which operations and why.
- Examine your Occupational Safety and Health Administration (OSHA) 300 log or other injury records to identify and discuss any eye-related injuries that occurred at your company in the past.



Introduction

Our sense of sight may be one of our most treasured senses. Every year too many workers throughout the United States will suffer eye injuries eliminating their precious gift of sight.

The Center for Disease Control (CDC) reports that approximately 2,000 workers nationwide experience a job-related eye injury requiring medical treatment every day. Many of these injuries can be prevented by controlling the hazards that can lead to an eye injury and wearing the appropriate eye protection for each hazard.

Definitions

Safety glasses – are considered primary protection against eye injuries. Safety glasses provide the user with protection against disabling injury from impact to the eye. Safety glasses with side shields also provide protection from flying particles. Safety glasses are available in prescriptions for vision correction. All safety glasses carry the American National Standards Institute ANSI Z-87.1 test rating.

Face shield – protects the users face, head, and neck against impact injury during operations where safety glasses alone are not sufficient, such as sawing, buffing, grinding, and chemical handling operations. Face shields are considered secondary protectors and must be worn only with primary protective devices.

Goggles – fit the face directly surrounding the eyes in order to protect the eyes from a variety of hazards. Goggles can provide primary or secondary protection. As a primary device, the goggle provides the wearer with impact protection. As a secondary protection, the goggle is worn over safety glasses and provides additional protection against ultraviolet light sources, chemical splashes, and impact hazards.

Welding helmet – provides protection for the eyes and face against sparks, molten metal, heat, and flying particles. Welding helmets should have the proper filter rating to protect the eyes against ultraviolet and visible radiation (light). Most modern welding helmets provide auto darkening lenses.

Discussion

Eye hazards

Eye hazards are present in many industrial and construction operations, including grinding, sawing, chipping, machining, polishing, cutting, sanding, drilling, chiseling, hammering, riveting, chemical handling, degreasing, plating, spraying, sweeping, woodworking, concrete cutting, buffing, welding, torch-cutting, brazing, soldering, blowing using compressed air, and laser work.

Most eye-injury accidents are the result of flying particles striking the eye. The flying particles can cause serious injuries such as punctures, abrasions and contusions. These particles are often smaller than a pin's head and can penetrate deep within the eye. It can be very difficult for doctors to remove these tiny particles and there is increased risk of infection.

All too often, employees do not protect their eyes in the workplace. Much of this is because workers feel something big must strike their eyes to cause damage. They feel they can turn or duck to avoid the impact at the last minute.

But they do not realize the threat these tiny particles are to the eyes — until it's too late. The eyes are highly sensitive organs that are vulnerable to injury.

Avoiding eye injuries

When working in conditions where the worker is exposed to flying particles, workers must wear primary protective devices such as safety glasses with side shields. Employees can wear stylish wrap-around safety glasses to meet the side-shield requirement. When chemical-splash hazards are present, workers can wear protective goggles in place of or in addition to safety glasses.

Secondary protective devices such as face shields are required in conjunction with primary protective devices. They are needed during severe exposure to impact and/or liquid-chemical splash hazards to protect the face.

Employees who wear prescription lenses while engaged in operations that involve eye hazards can wear eye protection that incorporates the prescription in its design, or wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses. Prescription glasses worn as primary protection must have safety lenses that meet ANSI Z87.1 rating.

Contact lenses can create additional hazards to employees. Dust and particles can get underneath the contact lens and scratch the eye. Corrosive liquids can also become trapped under a lens and using an eyewash facility is more difficult. Eye tissue can become permanently damaged by the time an employee can remove the contact lens and flush his or her eyes.

Eyewash stations

OSHA 29CFR 1910.151(c) – Requires an employer provide a facility for quick flushing of the eyes where an employee can be exposed to injurious corrosive materials. Plumbed and self-contained units must be capable of delivering no less than 1.5 liters of water per minute (0.4 gallons per minute) for a minimum of a 15-minute continuous flush. Make sure all eyewash stations are labeled and readily accessible in the immediate work area where workers use chemicals. In the event of an eye injury, get medical attention immediately.

To allow the employee to see his or her work and perform his job safely, proper lighting is important. Employees should get an eye exam periodically, especially older employees, to see if they need prescription lenses to see their work clearly. Clear vision can avoid hazards and prevent accidents.

Requirements and responsibilities

OSHA standard OSHA 29CFR 1910.132(d) requires employers to assess each job in their workplace to determine the types of hazards and the appropriate personal protective equipment (PPE) necessary to protect the employee performing the task. This assessment is required to be done in writing and must include the date and signature (Certification) of the person responsible for performing the assessment. Eye protection is a required part of the written assessment.

The employer must also train employees on selecting, using, inspecting, storing, cleaning, and the limitations of each type of PPE. Supervisors should oversee their employees and make sure they are wearing the appropriate PPE and enforce the policy.

Employees should:

- Wear required PPE.
- Inspect the PPE for damage.
- Keep it clean and in a sanitary condition.
- Store it properly.

Conclusion

Eye protection prevents many injuries from occurring in workplaces every day. It's important to understand the hazards present in the workplace and know what proper eye protection is needed. Ensure that eye protection is worn where required and that it is maintained and stored appropriately. Remember that eye injuries do not only occur at work, so take these safe practices home with you and protect your eyes.

Group activities

Review your company's hazard assessment and PPE selection form. Ensure employees understand your company's commitment to a safe workplace including providing appropriate PPE, training employees, and enforcing safety rules.

Review any eye related injuries that have occurred in the past. Discuss how these injuries happened and how a similar injury can be prevented.

Provide a display of all the types of eye protection used throughout your operations. Have each employee describe the potential hazards in their work areas and then select the appropriate eye protection required. Have the employees demonstrate proper fit and adjustment of the PPE. Provide feedback and guidance on selection and adjustment and recommendation for selecting other PPE if fit is not correct.

Next demonstrate the proper cleaning methods for the PPE. Include in your demonstration what are acceptable and unacceptable cleaning solutions to be used within your facility. Lastly demonstrate and discuss proper storage of PPE.

References

[OSHA, Eye and Face Protection](#)

[CPWR Eye Injuries Hazard Alert](#)

[Montana State Fund, Eye protection video](#)

[U.S. Bureau of Labor Statistics, Workplace Injuries Involving the Eyes, 2008](#)