



# Eye and Face Protection Meeting

## Meeting Objectives

This is to explain why eye and face protection are important, when it is legally required, and to demonstrate the eye and face protection used on the job. The results of this meeting should be a greater understanding of when and why to wear protection, how to select, use, and maintain it. After this meeting, all workers should use appropriate protection when required on the job.

## Suggested Materials to Have on Hand

- Selection of safety glasses and goggles
- Selection of face shields

## Introduction/Overview

We often take sight for granted and do not recognize the many hazards that could damage or destroy it. This is a particular concern on the job. The National Safety Council estimates that there were at least 130,000 work-related eye injuries causing temporary or permanent disability in a recent year. Some people lost their sight entirely. But it does not have to be this way.

The U.S. Department of Labor says the three most common reasons for industrial eye injuries are:

- Not being aware of potential eye hazards
- Not using protective eyewear
- Using the wrong type of eyewear for the hazard

Like most companies, we provide protective equipment that is designed to preserve your vision. Today we will talk about the types of eye hazards you might encounter on the job. We will also discuss and look at the kinds of protective eyewear you can use to prevent injuries. In addition, we will review hazards to the face and the protective gear that can prevent face burns or irritation.

## General Hazards

There are quite a few common on-the-job hazards that could harm your face and eyes. They include:

- Flying objects, such as pieces of wood, metal, stone, or sparks.
- Splashes from hazardous chemicals, acids, and other corrosives, or hot metal can seriously damage the eyes.
- Dust, fumes, mists, gases, and vapors can irritate or even harm unprotected eyes.
- Swinging objects such as ropes and chains can accidentally swing into the eye or face.
- Electrical arcing and sparks can damage the eyes on contact.
- Radiant energy from welding and cutting or operations that use ultraviolet or infrared light are yet another hazard to the eyes.

We can prevent eye and face injuries from all these hazards by planning jobs carefully and using protective equipment.

## OSHA Regulations and Violations

OSHA's regulation (29 CFR 1910.133) requires workers to use protection "when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation."



When the risk is flying objects, OSHA requires you to wear eye coverings that protect the eyes from the side as well as the front. When the risk is "injurious light radiation," OSHA offers a detailed chart that matches degree of radiation with the type of filter lenses you need to provide protection.

Eye and face protection must also meet the standards of OSHA's general personal protective equipment (or PPE) regulation (29 CFR 1910.132). It says that all forms of protection "shall be provided, used, and maintained in a sanitary and reliable condition." In addition, it must "be of safe design and construction for the work to be performed." The standard states clearly that "Defective or damaged personal protective equipment shall not be used."

Standards for various protective gear, including eye and face protection, are set by the American National Standards Institute (ANSI). When we buy protective spectacles or goggles or face shields, they are labeled to show that they meet the ANSI standards.

OSHA's general PPE standard also requires employers to "assess the workplace to determine if hazards are present, or are likely to be present," that require PPE. If employers find such hazards, they must "select, and have each affected employee use, the types of PPE" that will protect from those hazards.

This OSHA standard is considered performance-oriented. So, it does not necessarily list required PPE and leave it at that. Its purpose is to assure that people use when it is needed. Employers must let employees know what PPE is available and make sure each employee gets a good fit. The regulation also requires training employees who have to use PPE, so they know:

- When to use it
- What to use—and its limitations
- How to put it on, adjust it, use it, and take it off properly
- How to properly care for, maintain, and dispose of it.

To further assure that you understand how and when to use PPE, employers must certify in writing that employees have been trained. They must provide retraining if hazards or PPE change, or if there's reason to believe an employee does not have the necessary knowledge and skill to use the required PPE.

It may seem that the need to provide and use PPE to protect the eyes and face is obvious. Yet in a recent year, OSHA issued 1,009 violations of this regulation.

### Identifying Hazards

Nobody goes out to create a hazard to the eyes and face. Unfortunately, they can develop in almost any job operation and procedure. Employers must assess workplace hazards to determine if and when PPE is needed. Let us look briefly at the types of hazards we would look for to make sure eyes and faces are properly protected.

- Flying objects, the most common source of eye injuries, have many sources. They include such diverse operations as woodworking, cutting, coarse grinding, riveting, spot welding, and almost any job involving hand tools. You do not know when these operations could cause particles to fly, so it is important that everyone in the vicinity use eye protection.
- Dust particles can also have many sources, such as woodworking, buffing, or even a work area that has not kept clean.
- Liquid splashes are another common hazard. They are a risk when you handle chemicals, acids, or corrosives, or perform degreasing operations. You also have to watch out for molten metal splashes from pouring, casting, or welding.



- Welding, cutting, brazing, and soldering can also create hazards related to exposure to light and/or radiation.
- Still another hazard category is vapors or fumes from hazardous liquids. They can damage the eyes or burn or irritate the skin.

If you are not sure whether a chemical can be a hazard to your eyes and face, check its material safety data sheet. It will both identify the hazard and recommend protective equipment. Identifying other types of hazards simply requires common sense. You've probably all encountered flying objects, unidentified or otherwise, as well as particles and splashes. You know that they are often unavoidable. So, the bottom line is this: Always assume that a possible hazard will become a real hazard and use protective equipment. Think ahead. If anything could possibly happen, get proper protection before you start the job.

Keep in mind that not all eye injuries are the fault of the injured worker. The Bureau of Labor Statistics study found that about one-third of workplace eye injuries were caused by another worker. So be sure you watch out for what others are doing and use PPE accordingly.

#### **Protection against Hazards**

No matter what eye and face hazards exist, you can prevent most injuries when you wear the proper protection. The job and the hazard determine what protective gear you use. Some tasks present more than one hazard to the eyes and face. In these cases, OSHA recommends "protection against the highest level of each of the hazards."

(Note: This section outlines all types of eye and face protectors. Select the ones that apply to your group and use as much detail as necessary. Use actual protectors to demonstrate.)

The basic forms of eye and face protection are safety spectacles, safety goggles, and face shields. Spectacles, which protect against impact and radiation, are available with or without side shields. Goggles come in a wide variety of styles. Some have flexible fit, with ventilation; some have a cushioned fit and rigid body. There are also welding goggles with eyecups and filter lenses, and chipping goggles with eyecups and clear lenses. Face shields come with either plastic or mesh windows. Welding helmets are similar to face shields and may have a stationary or lift-front window.

When the risk is flying fragments, objects, chips or particles, OSHA recommends either:

- Spectacles with side protection
- Goggles, with flexible or rigid fit, plus side protection
- Face shields over goggles or spectacles. Use face shields in addition to other eye protection when you expect a high volume of flying objects.

When the hazard is a chemical or similar splash, you will probably use safety goggles. Some are ventilated, but designed to prevent liquids or sparks from getting in. Again, in very high hazard conditions, you will probably need a face shield, too. To keep dust, gases, and mists out of your eyes, you will often need unventilated goggles. Another option is to wear chipping goggles with eyecups, which fit closely over the eyes. Radiant energy from welding, cutting, and similar operations requires welding goggles and often face shields. The ones you will use have special lenses that filter out the harmful light or radiation.

OSHA has a chart that matches the particular equipment's arc current with the minimum degrees of lens shading required to protect the eyes. To make the best selection, OSHA suggests you start with a shade so dark you cannot see the weld zone. Then move to progressively lighter shades until you reach the darkest lens through



which you can see. The lens must, however, meet the OSHA filter standard for that particular task. Keep in mind that tinted and shaded lenses are not filter lenses unless they are so marked or identified.

When you are exposed to potential hot sparks or splashes, you will need goggles or spectacles with side protection and sometimes a face shield. These may have to protect not only against heat or splashes but against light and radiation using the filters we have just described.

OSHA warns you never to use eyewear with metal frames in an area with potential electrical hazards. As you know, metal conducts electricity, so wearing such frames would create a new hazard.

OSHA also gives special attention to people who wear glasses in order to see. The options here are protective eye gear made for your prescription or goggles that fit over your glasses. Not all protective eyewear can be worn over other glasses, so you have to make your selections carefully.

If you wear contact lenses, you can generally wear most eye and face protectors with no difficulty. However, OSHA cautions that "dusty and/or chemical environments may represent an additional hazard to contact lens wearers." In general, it is best to avoid wearing contacts on jobs that expose you to dust or chemical mists or vapors.

All the PPE we provide is believed to be the best protection for your job and its hazard. If, however, you switch tasks or encounter a new hazard, you may have to wear different eye and face protectors. Usually, we will be aware of what you need and provide it but if you are not sure you have the proper protection, talk to us.

### **Safety Procedures**

As I noted earlier, the OSHA standard specifically requires us to identify any hazards to the eyes and face in our workplace and to provide you with the necessary protection. In addition, OSHA requires you to use the protective gear we provide.

OSHA also says you must know how to fit and maintain this PPE properly. You need safety glasses, goggles, and face shields that are comfortable enough to work in but fit closely enough to keep hazards out. Spectacles should fit like any glasses. The sidepieces should touch the side of your head and curl behind the ears close to the head.

When you wear safety goggles, your eyes should look through the center of the lenses and the nose bridge should be on your nose. Many goggles have adjustable straps that help you get a good fit. That strap should rest low on the back of your head.

If your safety glasses or goggles tend to fog up, apply a lens defogging solution.

Like most PPE, safety eyewear can take a little getting used to. Once you know you have a good fit in terms of safety, wear them a bit in a nonhazardous situation. Then you will know if you need to make adjustments or try something different.

Before you put on any PPE, you have to inspect it to be sure it is in good condition to protect you. With eye and face protection, check that goggles straps are not knotted, twisted, worn, or stretched out. Check lenses, and face shield windows for pitting, scratches, and other damage. If you cannot see through them, they will not be very useful. Turn in and replace any damaged PPE.

When you remove eye and face protectors, inspect them again. Then clean them before you put them away. Use soap or mild detergent and water to clean the lenses. Disinfect eyewear that is contaminated by a



hazardous chemical, or that may be worn by someone else.

Keep clean eyewear in a closed container so that it will not get dusty, damp, or damaged between each use. Keep it in its proper place so that it will be ready and waiting for the next use.

The right PPE will prevent most injuries to your eyes and face. But you also must practice common sense. Even if you are wearing eye protection, you do not want hot, toxic, or simply painful things coming at your face and eyes. Here are a few hints:

- Do not open a container just to see what is inside.
- Keep shields around all potentially flying objects.
- Try to contain as many processes as possible.
- Before you start a job that could create an eye hazard, be sure other workers in the area are either "out of the line of fire" or are wearing eye protection.
- Know what to do if something gets in your eye or on your face.
- Let us take just a minute on that last point. Eye or face injuries always require immediate medical attention. However, sometimes you can take useful first aid steps while you wait.
- If a chemical or other substance gets in your eye, go immediately to the emergency eyewash. Flush the eye with water for at least 15 minutes; get water under the eyelids as well as on the surface. Then see a doctor.
- If a chemical splashes on your face, check the MSDS to be sure it is not reactive with water. If it is not, rinse with running water for at least 15 minutes and then see a doctor.
- If a particle gets in your eye, try to blink it out. If it does not come out, do not rub the eye. Keep it closed and covered and see a doctor.
- If something hits your eye, see a doctor.

### Suggested Discussion Questions

1. What are some hazards that could threaten your eyes or face?
2. What kinds of jobs could create these hazards?
3. What does OSHA require you to know about PPE—including eye and face protection?
4. What hazards call for eyewear with filtered lenses?
5. What types of protective eyewear do we use here?
6. What do you do before putting on eye and face protection?
7. What do you do when you remove eye and face protection?
8. What are some work procedures you can follow to prevent injuries to the eyes and face?
9. What do you do if you your eye is splashed by a hazardous substance?
10. Are there any other questions?

### Wrap-Up

Your eyes are one of your most valuable possessions. If something happens to them, they cannot be replaced. Unfortunately, eye injuries are all too common in many workplaces. We do not want you to be one of them. I have tried to make clear that we can prevent most eye injuries. Whenever there is a potential hazard to your eyes or your face, use the proper PPE. Clean and maintain your eye and face protectors carefully. If you take care of them, they will take care of you.

See our sample handout on the next page.



## Eye and Face Protection Safety Checklist

### Employers must:

- Assess workplace to identify hazards to eyes and face
- Provide sanitary, reliable, undamaged eye and face protection that defends against identified hazards and meets ANSI standards
- Inform employees about available PPE and ensure each individual a proper fit
- Certify in writing that employees have been trained to know:
- When to use eye and face protection
- What PPE to use when—and its limitations
- How to put on, adjust, use, remove eye and face PPE; care for, maintain, and dispose eye and face PPE

### Employees must:

- Use assigned eye and face protection
- Inspect, care for, and dispose of eye and face protection properly

### Be aware of the common causes of eye injuries.

- Flying objects from woodworking, cutting, machining coarse grinding, riveting, spot welding, hand tools
- Splashes from hazardous chemicals, acids, corrosives, hot metal
- Dust from woodworking, buffing, unclean work areas
- Fumes, mists, gases, and vapors
- Swinging objects (ropes and chains)
- Electrical arcing and sparks
- Radiant energy from welding, cutting, brazing, soldering, ultraviolet or infrared light

### To prevent eye and face injuries:

- Identify potential hazards and select proper PPE before starting a job
- Use eye protection with side shields to keep out flying objects
- Use face shields plus goggles or spectacles for serious hazards
- Use goggles and face shields with proper filtered lenses to keep out harmful light or radiation
- Never use metal-framed eyewear around live electricity
- If you wear corrective lenses, use protective eyewear that uses your prescription or fits over prescription glasses
- Avoid wearing contact lenses in areas with dust or chemicals

### Select eye and face protectors that:

- Provide best protection against identified hazards
- Are reasonably comfortable
- Fit snugly enough to keep out hazards

### Before using eye and face protectors:

- Inspect for damage:
- Knotted, twisted, worn, or stretched goggle straps
- Pitted or scratched lenses or face shield windows
- Turn in and replace damaged PPE
- Practice performing tasks while wearing PPE and make any needed adjustments or replacements

### After removing eye and face protectors:

- Inspect for damage
- Clean lenses with water plus soap or mild detergent
- Disinfect if contaminated by chemicals or if other people may use
- Store in proper place in closed containers

### Follow work procedures that prevent eye and face injuries

- Follow SDS precautions when working with chemicals
- Do not open a container just to see what is inside
- Keep shields around all potential flying objects
- Try to contain as many processes as possible
- Be sure other workers in area are protected before starting jobs that could create eye or face hazards.

### Get medical attention for eye and face injuries and know first aid:

- Chemical splash in eye: Go immediately to emergency eyewash and flush eye with water for at least 15 minutes. Get under eyelids.
- Chemical splash on face: Check SDS for water reactivity. If safe, rinse with running water for at least 15 minutes.
- Something in the eye: If it does not blink out, do not rub it. Keep eye closed and covered and get immediate medical attention.
- Blow to the eye: See a doctor.

