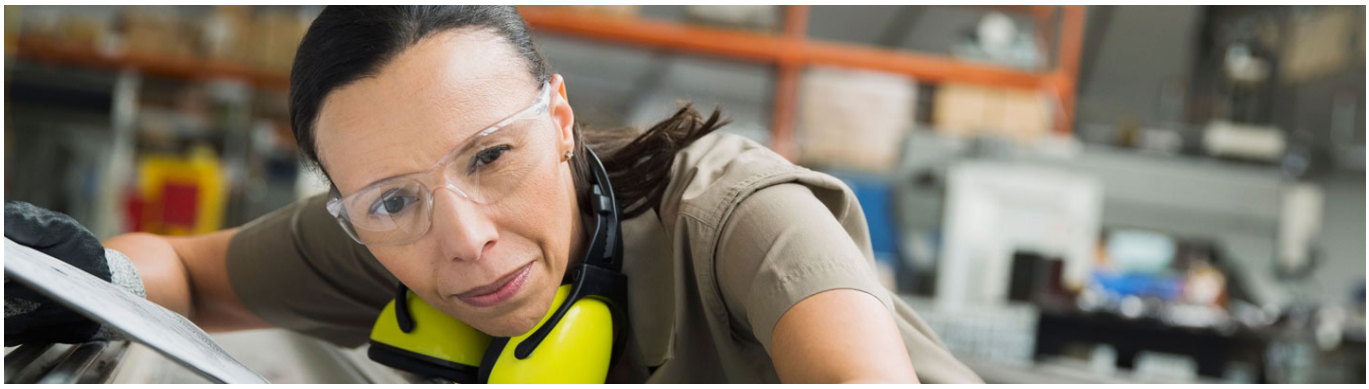

Employee Safety

How to Find the Right Protective Eyewear

Holly Martin | Feb 01, 2018

What You Need to Know:

OSHA relies on American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) consensus standards for eyewear.
A good fit is a prerequisite for getting employees to use and keep their eyewear on.
Some employers will pay to have one pair of prescription safety lenses made per person per year, but there are less expensive options.
You can select eyewear with anti-fog coating, which can be either hydrophobic so that water beads up and rolls off, or hydrophilic, which absorbs the condensation.

Safety managers: There are more nuances to eye and face protection than you might think. Learn how to find the right eyewear for fit and comfort level that also meets the OSHA and ANSI standards—and how to help ensure workers wear it on the job all day long.

Safety managers often struggle to know what kind of personal protective equipment to choose that meets the ***OSHA standard*** for eye and face protection. And even if the eyewear is in compliance, often it does not get used because of fit and comfort issues—leading to thousands of people blinded each year from work-related eye injuries.

"Almost 70 percent of these injuries could be prevented if the people had actually been wearing their eyewear," says Paul Harris, vice president of product development at MCR Safety. "People say they can't wear their safety glasses because they are uncomfortable or they fog up—so comfort and performance of eyewear is key to keeping them on workers' heads."

OSHA ***29 CFR 1910.133*** says: "The employer shall ensure that each affected employee uses appropriate eye or face 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."

The rule also states the eyewear must include side protection when there is a hazard from flying objects, and prescription lenses must be either incorporated in the eyewear itself, or be able to fit underneath the protective lenses.

Eyewear: Be Mindful of ANSI Standard Markings, Splashes Versus Particulates

"Safety managers should make sure the eyewear their employees are wearing has the proper ANSI markings on it," Paul Harris says. "All eyewear should display the Z87+ somewhere, whether on the lenses or the temples."

Individual eyewear models also can carry additional markings, such as:

- Z87-2+ (Rx frame)
- D3 (Splash/droplet)
- D4 (Dust)
- D5 (Fine dust)
- R and scale number (IR radiation)
- L and scale number (Visible light)
- U and scale number (UV radiation)
- W and shade number (Welding)
- V (Variable tint)
- S (Special purpose)

According to Paul Savage, it's especially important to distinguish between safety goggles marked for particulates versus those designed for splash.

"If you're working with a chemical and you have a potential for splash, you don't want to be wearing a particulate goggle, which is only designed to protect you from flying debris," he says.

"Particulate goggles have perforated holes in the top to keep air flowing through, so if there is a splash, that chemical can get on those holes and drip right into your eyes," Savage says. "Instead, you want to have splash-type goggles with special venting ports that will not allow the liquid to get in."

"The vast majority of on-the-job eye injuries could be prevented if the employee had their eyewear on," Harris says. "That's the biggest challenge for the industry—making sure the employee has the proper eyewear on their head when they are performing their application."

For more information, the OSHA website provides an interactive ***eTool*** to help safety managers choose the right eye and face protection appropriate for ***common hazards*** in the workplace.

Need help selecting the right eyewear? Have no fear: Use our handy *interactive eye and face protection selector* to sort through all of the options and conditions.

Follow the ANSI/ISEA Z87.1-2015 Face and Eye Protection Impact Tests

OSHA relies on American National Standards Institute/International Safety Equipment Association

(ANSI/ISEA) consensus standards for eyewear. The most recent version, ***ANSI/ISEA Z87.1-2015***, "prescribes the design, performance specifications, and marking of safety eye and face products."

The ANSI standard specifies multiple tests, including two impact tests, to determine the quality of any protective eyewear product.

"For high velocity impact, a small particle is fired at about 150 fps at the glasses from different angles, to make sure there are no cracks and the lenses and the temples remain intact," Harris says. "For high mass impact, a weighted spike is dropped down about 6 feet onto the lens, to make sure there is no cracking and the glasses don't fall apart."

In the U.S., manufacturers perform their own testing and mark each model showing that it endorses the corresponding ANSI standard.

Eyewear Protection for Fit, Comfort and Fashion

A good fit is a prerequisite for getting employees to use and keep their eyewear on.

"The last thing anybody wants to wear all day long is a pair of uncomfortable, heavy safety glasses," Harris says.

"Lightweight is key," he says. "And given that you've got such a wide assortment of people with different face shapes—from thin, long faces with eyes close together, to wide heads with broad noses and eyes wide apart—good fit is also key."

Plant managers often look for a single eyewear style that fits all the employees in order to minimize the number of pairs needed to keep in stock. One solution is flexible styles with adjustable temples and nosepieces that can be fit to almost any face.

In addition to fit and comfort, the style of the eyewear also contributes to whether it gets worn or not—even in industrial settings.

"You have to have a style that is somewhat fashionable—people want to wear something trendy that makes them look good," says Paul Savage, principle safety representative at Concurrent Technologies Corporation.

"The wraparounds that have a built-in side shield seem to be a favorite of employees," Savage says. "It's better than wearing regular glasses with side shields on them."

Don't Forget Prescription Eyewear PPE

"Prescription safety eyewear costs considerably more for a one-off custom lens," Harris says. "But if people can't see out of their safety glasses because their prescription's not in it, they're not going to wear them."

Some employers will pay to have one pair of prescription safety lenses made per person per year, but there are less expensive options, according to Harris.

"Some safety eyewear styles come with plain glass inserts that can be removed, so that a prescription can be loaded onto them, which minimizes your cost, but also protects the prescription lenses from getting scratched in a rough environment," he says.

A third option is a style of eyewear that people can wear over their existing prescription eyeglasses, which also has the benefit of protecting the prescription lens from scratches.

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> Paul Harris
> Vice President, Product Development, MCR Safety

Anti-Fogging Protective Eyewear and Goggles: Pay Attention to Coatings

If a pair of safety glasses or goggles fogs up, when walking out of a cold freezer into a room-temperature environment, for example, the employee is effectively blinded for the time it takes the fog to clear. But if the employee takes off the safety glasses during that time, he or she becomes vulnerable to an eye injury.

One solution is to select eyewear with anti-fog coating, which can be either hydrophobic so that water beads up and rolls off, or hydrophilic, which absorbs the condensation.

“An uncoated glass will fog up much faster than a coated glass,” Harris says. “The quality of the coatings will determine how quickly the fog dissipates.”

“When you are sweating hard, you can get just about anything to fog up,” says Savage. “But some safety managers provide PPE cleaning stations stocked with anti-fog towelettes or cleaning liquid that can help prevent fogging.”

How does your shop handle eyewear and face protection? Tell us in the comments.