

OHS

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Managing Risk As a Fundamental Business Process

Coming Out of the Fog
Are You Seeing All the Barriers to
Eyewear Compliance?

By Jodi Groh, Defog It by Nanofilm

Banom

Cut-resistant gloves
for the sheet metal, glass,
paper, and food industries.

see page 29

Coming Out of the Fog

Are you seeing all of the barriers to protective eyewear compliance?

BY JODI GROH

Safety eyewear helps prevent injury and reduce worker's compensation costs. Why is this proven remedy so hard to put in place? A simple audit may show workers are in a fog.

Research by the Centers for Disease Control and Prevention puts workplace eye injuries requiring medical treatment at 2,000 cases every day, with more than 100 of them resulting in one or more lost days of work. That adds up to more than 700,000 injuries, with nearly 37,000 resulting in lost time, and a cost of as much as \$300 million in annual lost production time, medical expenses, and worker's compensation.

In spite of statistical proof that protective eyewear prevents injuries, a Bureau of Labor Statistics survey found that nearly 60 percent of injured workers were not wearing eye protection at the time of an accident. As you examine reasons why workers fail to put on their safety glasses and goggles, there's one factor you may be forgetting: fogging.

Fogging and Safety Eyewear Non-Compliance: A Proven Relationship

The relationship between anti fog and the wearing of protective eyewear is well documented. A study published in *Accident Analysis & Prevention* magazine in 2009 reported on research done with focus groups made up of construction, manufacturing, service, and retail workers. All of the groups named fogging as a factor for not wearing safety eyewear, making it number one among vision-related reasons. More than 55 percent of research respondents suggested an anti fog solution to increase usage of personal protective eyewear. It was named by more focus groups than incentives, warning signs, eyewear cleaning stations, or as a condition of employment.

Further evidence came to light in research by Nanofilm, maker of Clarity Defog It™ anti fog, which conducted a research study among attendees at the 2009 National Safety Council Congress and Expo. More than 70 percent of the professionals who took part in the survey stated they either manage or specify products for people who have a problem with fogged protective eyewear or have a personal workplace fogging problem themselves. In addition, organizations such as NIOSH and the Center for Construction Research and Training also include discussions of fog prevention in their training materials for many industries.

Eye Safety Audits

Jerry Daniels, owner of North Georgia Safety Training Institute in Tate, Ga., offers both OSHA general safety and MSHA mine safety training. He has begun including a Q&A section in the eyewear safety portion of his work to help safety managers identify barriers to safety eyewear compliance, including fogging problems.

"Safety is a matter of human behavior, therefore it is behavior based, and addressing environmental factors as well as all human factors is a core component in developing an effective workplace safety culture," he said. "To get safety managers thinking comprehensively, I do a hands-on demonstration." Daniels puts on his hard hat but leaves his safety glasses dangling from the strap around his neck. He then asks the class what's wrong, and they instantly spot the eyewear.

Then his next question is, why would a trained worker not wear protective eyewear? "There are a variety of responses given, and fogging is often among them. Solve it, and you can have a safer workplace as a result."

A safety audit walk-through of your workplace can reveal the issues that contribute to safety eyewear non-compliance, including the problem of fogging. As you move through your facility or job site, ask questions, put yourself in the workers' shoes (or safety glasses), and examine the barriers.

Audit Fogging Danger Zones:

- **Heat and Humidity.** The combination of heat and humidity increases the likelihood of fogged safety glasses and safety goggles, and it can easily become a problem for both outdoor and indoor workers. The humidity creates more moisture, which can form fog. High heat increases worker perspiration, further adding to the moisture problem. That same high heat increases the chance of condensation of the moisture on protective eyewear.

- **Sudden Environmental Changes.** When you open the door of an oven or step from an air-conditioned car into a hot muggy day, eyewear fogs. While it may be just an annoyance in everyday life, it can present a real hazard in the workplace. The cloud of steam pulp and paper workers experience from the paper-drying equipment can virtually blind them in an instant. A food processing worker going in and out of coolers can face the same problem. A construction worker or warehouse materials handler who's moving between indoor and outdoor tasks is also at risk.

- **Full-body Gear.** More gear means more fogging danger. Workers in full-body protective gear, including tactical officers; firefighters; and hazmat, cleanroom,

and nuclear utility workers, are at higher risk for fogging problems. These closed systems may not allow fog-causing heat and moisture to vent completely. Keep exertion rates in mind, too, as full-body gear can create more heat and cause increased worker perspiration. If your workers wear closed safety goggles or full-face faceshields, they're likely to experience some of the same problems as those who wear full-body gear.

■ *Eyewear Selection, New Design Changes.* The good news in recent years is the introduction of more trend-conscious safety eyewear designs that workers actually want to wear. The bad news? These new designs may have a tighter fit to the face or more of a wraparound silhouette, which is definitely good for safety but may be bad for ventilation. If your team is suddenly experiencing more fogging, this may be the culprit. Or if you've recently added new features to the eyewear, such as side protection, the same fogging effect could result.

Even if the style hasn't changed, new safety glasses may be more prone to fog because of the lens material. Safety eyewear is made from several materials, including acrylic, polycarbonate, other plastics, and even tempered glass. Many — especially prescription lenses — may have an anti-reflective, non-scratch or easy-clean coating on them. Even if you are already offering an anti fog solution, it may not work on the new material. Not all anti fogs are the same. An anti fog that chemically bonds well to the surface of one may bond only loosely to another, which means it will be washed off more easily by humidity and perspiration.

You may want to test several different anti fog products to see which one is optimized for your new situation or work environment. You can perform a few simple tests in your company kitchen. Get a selection of safety eyewear and coat one lens with an anti fog. Hold the safety glasses over boiling water to simulate high heat and humidity to see how the product will perform. To simulate moving through changing temperatures, coat one lens of safety glasses with anti fog. Put eyewear in the kitchen freezer for five minutes, then remove it and breathe on the lens to see whether it fogs. Repeat the procedure several times.

Make It Easy to Keep Safety Eyewear On

It's crucial to provide safety eyewear, and it's important to give workers methods for keeping that eyewear convenient, such as straps and cases. Be sure to take the next step and make sure to help workers not only keep safety eyewear nearby, but keep it on. Anti fog can play an important role.

"Improving compliance with safety eyewear guidelines is a matter of breaking down the issues that interfere," safety trainer Jerry Daniels concludes. "I've found that fogging is an issue that may not be fully identified or completely addressed in the workplace. Fortunately, like other environmental factors, there are solutions that can mean a real difference in safety." **OHS**

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