



ANSI Z87+ D4
impact & dust protection



ANSI Z87 D3
droplet/splash protection



ANSI Z87
general use

Not All Eye Protection is Created Equal

Summary

In recent months, multiple eye-related incidents have occurred at Northwestern. In some of those instances, it was discovered that employees were wearing eye protection, but the eye protection was inadequate.

Some safety eyewear may appear to provide adequate protection when in fact they come up short. For example, some eyewear is designated for general use, while others provide specific protection from impact, splashes, dust, and vapors.

The Occupational Safety and Health Administration (OSHA) [requires](#) that we use appropriate eye protection meeting the American National Standards Institute (ANSI) Z87.1 standards when exposed to eye hazards from flying particles, dust, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

Eye-opening statistics

OSHA estimates that 1,000 eye injuries occur every day in U.S. workplaces. The two major reasons for eye injuries at work are not wearing eye protection and wearing the wrong kind of eye protection. More than 90 percent of the injuries to workers wearing eye protection resulted from objects or chemicals going around or under the eyewear frames.

Here at Northwestern, there were thirty-three eye-related incidents from 2019 through 2022.

Online resources

- [Northwestern's PPE Program](#)
- [Grainger Safety Glasses Guide](#)

Eyewear selection

In order to select the correct eye protection, you must first assess the task at hand and identify the hazards you will be exposed to. Refer to your department's Personal Protective Equipment (PPE) hazard assessment for help identifying hazards associated with your work area. If no PPE hazard assessment exists for your department, contact [Environmental Health and Safety](#) (EHS).

ANSI-approved eyewear is marked to indicate the device's ability to defend against specific hazards. The table below is an overview of the ANSI markings and the protection offered. Look for these markings on the eyewear frame and refer to the images at the top of the page for examples of common safety eyewear at Northwestern.

ANSI safety eyewear markings

Mark	Description
Z87	Meets minimum standards; all safety eyewear must have this mark
+	Provides <u>impact</u> protection from flying objects and debris
D3	Provides <u>droplet</u> and <u>splash</u> protection
D4	Provides <u>dust</u> protection when working in dusty environments, such as above ceilings
D5	Provides <u>fine dust</u> protection, necessary for working around vapors

Other considerations

Light radiation: Protection against light radiation, such as when welding or working with lasers, is required. Refer to the OSHA [website](#) to ensure you select the correct '**shade**' appropriate for the work to be performed.

Prescription eyewear: Safety eyewear must conform to a higher standard than regular eyeglasses. If you wear corrective eyeglasses, inform your supervisor. Many manufacturers offer solutions, such as installing prescription lenses in ANSI-compliant safety eyewear.

Key Points

- ✓ Know the eye dangers at your workplace and use proper protection
- ✓ Supervisors are responsible for ensuring that you have access to adequate eye protection and that it is worn when necessary
- ✓ Eliminate hazards before starting work by using machine guards, work screens, or other engineering controls
- ✓ Keep safety eyewear in good condition and contact your supervisor to request replacements when safety eyewear is damaged

For Additional Information

Contact Environmental Health & Safety at ehs@northwestern.edu

Do you or your team have a safety story you'd like to share? Contact Environmental Health and Safety for details.