



U.S. Department of Labor

Occupational Safety and Health Administration

Directorate of Technical Support and Emergency Management

# Head Protection: Safety Helmets in the Workplace

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Safety and Health Information Bulletin

SHIB 3-6-2024

## Introduction

OSHA regulates head protection for general industry, construction, and maritime and requires employers to ensure affected workers wear appropriate head protection. This Safety and Health Information Bulletin (SHIB) provides information for employers and employees when selecting PPE for head protection. This SHIB also provides instructions for properly inspecting and storing head protection. With a thorough understanding of the benefits and capabilities of head protection options, employers and workers can make informed decisions on selection and use.

## Background

Proper head protection is crucial in work environments with falling objects, struck-by, overhead electrical hazards, and risks from slips, trips, and falls. Both scientific understanding of head injuries and head protection technology continues to advance. Modern head protection, whether it's a safety helmet or a hard hat, varies in styles and levels of protection, allowing employers and workers to choose head protection appropriate for the job. OSHA's head protection standards state that there can be compliance through ANSI Z89.1-2009, 2003, and 1997: published by the International Safety Equipment Association (ISEA). The range of products available today allows employers and employees to select the right type of head protection for the job, comply with the requirements of all OSHA standards (general industry, construction, maritime), and obtain optimum head protection.



*Figure 1- Example of a safety helmet.*

Two Types (impact) and three Classes (electrical) of head protection are recognized.

**Type I** head protection offers protection from blows to the top of the head.

**Type II** head protection offers protection from blows to the top and sides of the head.

**Class G** (General) head protection is designed to reduce exposure to low voltage conductors and are proof tested at 2,200 volts (phase to ground).

**Class E** (Electrical) head protection is designed to reduce exposure to higher voltage conductors and are proof tested at 20,000 volts (phase to ground).

**Class C** (Conductive) head protection is not intended to provide protection against contact with electrical hazards.

ANSI/ISEA Z89.1-compliant head protection, including safety helmets and hard hats, are manufactured using a wide range of materials from high density polyethylene to glass reinforced nylon. Some hard hats and safety helmets incorporate advanced energy re-distribution solutions that reduce rotational forces of certain impacts and distribute impact energy throughout the headwear to help reduce brain trauma. Chin straps are recognized as an effective way to keep head protection on when working in awkward positions or when experiencing a slip or fall and should be considered for use with all head protection.

Manufacturers offer an array of product-specific approved optional features designed to address specific workplace hazards. Accessories can include add-on face shields or goggles, to protect against projectiles, dust, and chemical splashes, and hearing protection and communication systems. In addition, impact indicator technology can be mounted on protective headwear for concussion awareness. However, head protection with integrated technology may not be suitable for some workplaces.

#### Choosing the right head protection

Employers must conduct a hazard assessment at their job site and based on the workplace hazards determine whether head protection is necessary and if so, the most appropriate type.

#### Safety Helmets for OSHA

After a general Job Hazard Analysis of its work and a thorough evaluation of head protection options, OSHA determined Type II, Class G safety helmets were the most appropriate form of head protection for its employees. The Agency recognizes that based on their own Job Hazard Analysis, employers and workers may decide that another form of head protection is for them.

#### Considerations when selecting head protection.

**Construction Sites.** For construction sites, especially those with high risks of falling objects and debris, impacts from equipment, awkward working positions, and/or slip, trip, and fall hazards: consider Type II head protection with chin straps.

**Oil and Gas Industry.** For oil and gas industry worksites where workers face multiple hazards, including potential exposure to chemicals and severe impacts: consider Type II head protection with integrated eye and face protection, like face shields and goggles.

**Working from Heights.** For tasks or jobs that involve working from heights: consider head protection with chin straps to prevent the head protection from falling off.

**Electrical Work.** For tasks involving electrical work or proximity to electrical hazards, head protection with non-conductive materials (Class G and Class E) provide protection to prevent electrical shocks. NOTE – Vented hard hats or safety helmets cannot be used for electrical work.

**High and Low-Temperature Environments.** In high temperatures or where there is exposure to molten materials, employers should select head protection with advanced heat resistant properties, which can provide appropriate protection to workers. These are marked “HT” on the label.

For cold environments, employers should select head protection that has been preconditioned in low temperatures prior to testing. These are marked “LT” on the label.

**High visibility.** High visibility head protection is marked “HV” on the label. HV head protection helps workers be seen on jobsites like construction and road work.

**Specialized Work Environments.** For jobs that require integrated face shields, hearing protection or communication devices, employers should consider protective headwear that allows for these manufacturer compatible safety features.

### Properly storing and evaluating head protection

Always refer to the manufacturer’s specific guidelines for head protection care, use, and storage. As a general rule:

1. Inspect the outer shell for cracks, dents, or other signs of damage. Run your fingers over the surface to check for any irregularities.
2. Examine the suspension system (headband and chin strap) for wear and tear, ensuring it is securely attached to the shell and free from damage, and inspect interior cushioning for wear or compression, if applicable. If there are any signs of deterioration, contact the manufacturer for replacement options.
3. Check for labels and certification marks. Look for labels and certification marks inside the head protection. These indicate that the head protection meets the necessary safety standards and requirements. Check that the labels are legible and not tampered with. Note: only head protection having a reverse-wearing label or mark can be worn in reverse.
4. Examine accessories and attachments. If head protection has manufacturer approved accessories or attachments (face shields, goggles, earmuffs, etc.), inspect them for damage or signs of wear. Make sure they are securely fastened to the head protection and are functioning correctly.
5. Check for proper fit. Before using head protection, ensure it fits comfortably and securely. Adjust the suspension system to achieve a snug fit without excessive pressure points. Head protection should not be too loose or too tight.
6. Refer to the manufacturer's guidelines for recommended lifespan or guidance on when to take head protection out of service. The service-life of head protection depends on many factors including storage, handling, use, and exposure to harsh environments including UV Rays. Any hard hat or helmet should be discarded when it is impacted or if there are any signs of damage or degradation.
7. Clean and dry head protection before storing. After each use, clean the exterior of head protection with mild soap and water. Ensure no dirt, debris, or chemicals are present that could compromise the

head protection's structural integrity. Once cleaned, allow the head protection to air-dry. Avoid exposing head protection to direct sunlight, extreme temperatures, or chemicals during storage. Do not store your head protection in your car or where it may be exposed to direct sunlight or extreme temperatures.

8. Impact damage. If head protection has experienced an impact or has been subjected to a significant force, retire it immediately, even if there is no visible damage. Head protection is designed for single-use impact protection and may not retain its full effectiveness after an incident.
9. Keep Records: Maintain a record of each inspection, noting the date, any findings, and actions taken. Document the date of purchase and any relevant information about the head protection to track its lifespan. This is recommended for all personal protective equipment.

## Resources

[OSHA's Website](#): The OSHA website provides extensive information on workplace safety, including head protection requirements. Workers can find OSHA standards related to personal protective equipment (PPE) and head protection.

General Industry. [29 CFR 1910.135 - Head Protection](#): The general requirements of this standard state that "The employer shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injury to the head from falling objects," 29 CFR 1910.135(a)(1), and that "The employer shall ensure that a protective helmet designed to reduce electrical shock hazard is worn by each such affected employee when near exposed electrical conductors which could contact the head," 29 CFR. § 1910.135(a)(2).

Construction. [29 CFR 1926.100 – Head Protection](#): This standard generally requires that "Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets." 29 CFR 1926.100(a).

Maritime. [29 CFR 1915.155 - Head Protection\(Shipyard\)](#), [29 CFR 1917.93 – Head Protection \(Marine Terminals\)](#), and [29 CFR 1918.103 – Head Protection \(Longshoring\)](#): Each of the maritime standards generally require that "The employer shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injury to the head from falling objects." 29 CFR 1915.155(a)(1); 1917.93(a), 1918.103(a).

[OSHA Regional and Area Offices](#). Employers and employees can contact their local OSHA regional or area offices for assistance and information on head protection requirements.

[ANSI/ISEA Z89.1 - Industrial Head Protection](#): This is the ANSI standard that specifies performance and testing requirements for industrial head protection, including safety helmets and hard hats.

## How to Contact OSHA

To discuss a health and safety issue at work, contact OSHA toll-free at 1-800-321-6742 (OSHA) or [by email](#), or [contact your nearest OSHA office](#).

This Safety and Health Information Bulletin is not a standard or regulation, and it creates no new legal obligations. The Bulletin is advisory in nature, informational in content, and is intended to assist employers in providing a safe and healthful workplace. Pursuant to the Occupational Safety and Health Act (OSH Act), employers must comply with hazard-specific safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved State Plan. In addition, pursuant to Section 5(a)(1), the General Duty Clause of the Act, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take reasonable steps to prevent or abate the hazard. However, failure to implement any recommendations in this Safety and Health Information Bulletin is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.

There are 29 OSHA-approved occupational safety and health State Plans. State Plans are required to have standards and enforcement programs that are at least as effective as federal OSHA's and may have different or more stringent standards. More information about State Plans is available at: <https://www.osha.gov/stateplans>.