

SAFETY GUIDELINE Head Protection

Policy

The University of Nebraska Medical Center (UNMC) aims to minimize the risk of head injuries to personnel. To accomplish this, appropriate head protection must be worn whenever there is a risk of head injury from impact, falling or flying objects, electrical shock, or burns.

Head protection must meet the requirements specified in the most recent American National Standard for Industrial Head Protection (ANSI/ISEA Z89.1).

Department supervisors are responsible for ensuring that each affected employee wears a protective helmet when working in areas where there is a potential for head injury from impact or electrical shock.

Hazards to Consider

Impact: General impact from stationary objects, such as exposed beams, pipes, and ductwork, as well as impact from falling or flying objects, including tools, hardware, and construction materials.

Electrical: Shock and burns can occur when working near electrical conductors that may come into contact with the head.

Head protection protects workers by:

- Deflecting blows to the head
- Resisting penetration
- Absorbing the force of impacts via a suspension system
- Preventing top-of-the-head impacts from traveling down the spine
- Insulating against electrical shocks
- Providing water resistance
- Being fire resistant

Head Protection Types

<u>Bump caps</u>: Bump caps are not approved by OSHA or ANSI. They are designed to help wearers avoid bruises, scrapes, and abrasions caused by minor impacts with stationary objects. Bump caps are not appropriate for protection against falling or moving items. They are **not** to be used when job site hazards require ANSI Z89.1 compliant head protection.

<u>Type I Hard Hat:</u> This hat cushion blows to the crown or top of the head. It protects from falling or flying tools, small parts, or similar items and provides impact protection from stationary objects.

<u>Type II Hard Hat:</u> This hat reduces impact from blows to the crown or top of the head and protects employees from front, back, and side impacts. It is required when working around moving equipment or materials that present hazards from horizontal impact.

Head Protection Classes

<u>Class G (General)</u>: This category encompasses all-purpose, general construction helmets that offer good impact and penetration protection, as well as limited voltage protection. These hard hats are tested up to 2,200 volts and may be appropriate for general construction work.

<u>Class E (Electrical)</u>: Hard hats are tested up to 20,000 volts to protect against high-voltage shocks. They are designed for electrical work where employees are regularly exposed to high-voltage environments. They provide good impact and penetration protection.

<u>Class C (Conductive)</u>: Hard hats **not** intended to protect employees from contact with electrical conductors. Employees should only use it when there is no risk of encountering electrical hazards. It provides good impact and penetration protection while also offering more breathability.

Additional hard hat features that must meet ANSI requirements include:

- Low-temperature applications
- High-temperature applications
- High visibility
- Reverse donning (wearing head protection forward or backward)

Selection of Head Protection

Appropriate markings must be reviewed and verified to determine if head protection meets ANSI Z89.1 requirements. ANSI requires permanent markings or labels to be affixed inside certified head protection models. These markings or labels must include the following safety information:

- Manufacturer's name or identification mark
- Date of manufacture
- Applicable ANSI standard
- ANSI type designation (I or II)
- ANSI class designation (G, E, or C)
- Appropriate head size range for fitting
- Markings to indicate ANSI compliance with additional hard hat features
 - Low temperature rating (LT)
 - High temperature rating (HT)
 - High visibility (HV)
 - Reverse donning (image to the right)



The head protection must be replaced if the certification markings are no longer legible or missing.

Considerations when selecting head protection:

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

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

<u>Electrical Work:</u> For tasks involving electrical work or proximity to electrical hazards, head protection made of non-conductive materials (Class G and Class E) protects against electrical shocks. Please note that vented hard hats **are not suitable for use in** electrical work.

<u>High and Low-Temperature Environments:</u> Head protection with advanced heat-resistant properties should be used in high temperatures or when exposed to molten materials. These are marked with the letters "HT" on the label.

Head protection that has been preconditioned in low temperatures before testing should be used for cold environments. These are marked with the letters "LT" on the label.

<u>High Visibility</u>: High-visibility head protection is marked with the letters "HV" on the label. It helps workers be visible on job sites, such as construction and road work.

<u>Specialized Work Environments</u>: For jobs that require integrated face shields, hearing protection, or communication devices, protective headwear with these manufacturer-compatible safety features should be used.

Comfort, Fit, Maintenance, and Storage

Head protection must comply with ANSI Z89.1 requirements by reviewing and following appropriate manufacturer instructions.

ANSI requires head protection to come with manufacturer's instructions that explain the following:

- Proper use
- Appropriate methods for fitting and size adjustments
- Guidelines for care, maintenance, and storage
- Useful life
 - Note: Manufacturers are not required to define useful life in years. Employees must understand that conditions such as prolonged sunlight or chemical exposure can affect protection over time.

Employees required to wear head protection must comply with the manufacturer's requirements and instructions. Generally:

- Hard hats should not be altered or modified in any way. Accessories must be compatible with the hard hat to ensure that protection is not compromised. Alterations may result in a lower level of protection than initially intended.
- Do not drill holes in the shell for added ventilation.
- Do not paint or inscribe on the shell without consulting the manufacturer.
- Do not wear with the shell tilted to one side.
- Do not wear the hard hat backward unless it is approved to be worn that way (the label has the reverse donning image)
- Do not place stickers on the shell, as they can obscure signs of deterioration.
- Inspect the outer shell for cracks, dents, or other signs of damage. Run your fingers over the surface to check for any irregularities.
- Inspect the suspension system (headband and chin strap) for signs of wear and tear, ensuring it is securely attached to the shell and free from damage. Inspect interior cushioning for wear or compression, if applicable. Contact your supervisor for replacement options if there are any signs of deterioration.
- Check for labels and certification marks inside the head protection. These indicate that the head protection meets the necessary safety standards and requirements. Verify that the labels are legible and have not been tampered with. Only head protection with a reverse-wearing label or mark is permitted to be worn in reverse.
- Examine accessories and attachments. If the head protection has manufacturerapproved accessories or attachments (such as face shields, goggles, or earmuffs),

inspect them for damage or signs of wear. Ensure they are securely fastened to the head protection and are functioning correctly.

- Check for improper 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.
- Refer to the manufacturer's guidelines for the recommended lifespan or guidance on when to remove head protection from service. The service life of head protection depends on several factors, including storage, handling, use, and exposure to harsh environments, such as UV rays. Any hard hat or helmet should be discarded when it is impacted or if there are any signs of damage or degradation.
- Clean and dry head protection before storing. After each use, clean the exterior of the 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 head protection in vehicles where it may be exposed to direct sunlight or extreme temperatures.
- Inspect the 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.
- Keep records. Record each inspection, noting the date, findings, and actions taken. Document the date of purchase and any relevant information about the head protection to track its lifespan.

Training and Issuance

Department supervisors are responsible for determining and providing the appropriate personal protective equipment (PPE) and training on the PPE required for processes being conducted. Employees are responsible for inspecting their head PPE before and after use, reporting any defects or damage to their supervisor, wearing PPE as instructed, and maintaining and storing PPE appropriately. PPE training should be documented, and a copy of the training record should be available upon request. Please review the <u>Personal Protective Equipment (PPE)</u> <u>Training & Issuance Record</u> for additional information.

Additional Resources

OSHA 29 CFR 1910.135 OSHA 29 CFR 1926.100 OSHA 29 CFR 1910 Subpart I Appendix B

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Please call 402-559-6356 or email unmcehs@unmc.edu with any questions.