Personal Protective Equipment - Construction Head Protection

Thousands of head injuries occur each year in construction. Head injuries are caused by falling or flying objects, bumping the head against a fixed object, or electrical shock and burns.

Controlling the hazards first

As with any personal protective equipment, first attempt to eliminate or control hazards. This can be done with administrative controls. For example, have the worker who is up on a scaffold (and who could potentially drop tools below) work at a different time than those who typically work below. Engineering controls that change the design of a work-site, such as placing work areas far enough from electrical lines that there is no exposure, also work well.

Selecting head protection

If head hazards remain after they have been assessed and controlled, provide employees with appropriate head protection for the hazards identified. Having all employees wear hard hats at all times while on-site is not a bad idea, since most construction sites have some head hazards no matter what precautions are taken.

With a hard outer shell and a suspension system inside, the basic hard hat is designed to do two things: resist penetration and absorb the shock of a blow. However, not all hard hats are the same. Depending on the class and type, of the hard hat, some hard hats can do much more. The American National Standards Institute (ANSI) standard Z89.1-1969 places hard hats into three classes A, B, & C. ANSI also specifies two types of hard hats: 1 (full brim) and 2 (no brim).

According to §1926.100, head protection intended for protecting employees against head hazards must meet ANSI standards: Z89.1-1969 (for impact hazards and penetration of falling and flying objects) and Z89.2-1971 (for high voltage electrical shock and burn hazards).

In 1997, ANSI released ANSI Z89.1-1997. This standard revised the types of classes for industrial head protection. When purchasing new hard hats, you may run across this new designation. There are two types of helmets based on impact capabilities:

<table>
<thead>
<tr>
<th>Type</th>
<th>Helmets intended to reduce the force of impact resulting from a blow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Only to the top of the head</td>
</tr>
<tr>
<td>2</td>
<td>Which may be received off center or to the top of the head</td>
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</tbody>
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ANSI also designated three classes based on electrical protection:

<table>
<thead>
<tr>
<th>Class</th>
<th>Helmet description</th>
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<tbody>
<tr>
<td>G (General)</td>
<td>Intended to reduce the danger of contact exposure to low voltage conductors. Test samples are proof-tested at 2,200 volts (phase to ground).*</td>
</tr>
<tr>
<td>E (Electrical)</td>
<td>Intended to reduce the danger of exposure to high voltage conductors. Test samples are proof-tested at 20,000 volts (phase to ground).*</td>
</tr>
<tr>
<td>C (Conductive)</td>
<td>Not intended to provide protection against contact with electrical conductors.</td>
</tr>
</tbody>
</table>

*This voltage is not intended as an indication of the voltage at which the helmet protects the wearer.

Though the new designations have been introduced by ANSI Z89.1-1997, OSHA only requires you to follow the old ANSI Z89.1-1969. Whatever system you use, be sure you select the hard hat that gives adequate protection.

Employee Training

An effective head protection training program should involve training employees so they know:

- When head protection is necessary. Share company policies or show workers hard hat designated areas which may be indicated by signs.
- What head protection is necessary.
- How to properly don, doff, adjust, and wear head protection.
- The limitations of the head protection.
- The proper care, maintenance, useful life, and disposal of head protection.

Training Tips

During head protection safety training, you may want to review the head hazards most commonly found at your jobsites and present the kinds of head protection required at your company.

Where To Go For More Information

29 CFR 1926.100—Head protection.