

Proper use and maintenance of hard hats on the job site.

Topped OUT, Part Two

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WHILE CHOOSING THE APPROPRIATE EQUIPMENT

for a specific job is certainly important, maintaining that equipment so that it performs its job properly is equally important.

In the previous article, we discussed features to look for in selecting an appropriate hard hat for the job site (see “Topped Out” in the October 2016 issue, available at www.modernsteel.com). This time around, we’ll discuss some of the things employers and workers should do to help keep the hard hat functional and serviceable.

Don’t Mix and Match

Hard hats are designed as a system; the shell and suspension work together to provide protection to the wearer. Therefore, hard hats should always be maintained using the manufacturer’s original parts. Parts from different manufacturers should not be mixed (e.g., the suspension from one manufacturer and the shell from another) as this could create a situation where the protection offered by the hard hat is compromised.

In addition, manufacturers are required to test their hard hats with any attachments they offer (e.g., ear muffs or a face shield) to ensure the hat still meets ANSI Z89.1: *American National Standard for Industrial Head Protection* design requirements. However, there is no requirement to test with other manufacturers’ attachments—yet another reason to avoid mixing and matching.

When it comes to accessories (like scarfs or cold-weather liners) that are typically worn under hard hats, keep in mind that

they may compromise the functionality of the hard hat and in some cases may create a violation of U.S. OSHA regulations. Consult the April 17, 2006 OSHA Letter of Interpretation (available www.osha.gov) for a further discussion of this issue.

As noted, the shell and suspension are designed to work together. The clearance between the shell and the top of the suspension allows for the hard hat to compress during impact and absorb some of the shock without transferring it to the wearer’s head or neck. This clearance space must not be used as a handy storage space. Storing items like gloves or disposable respirators in this space can reduce the shock absorption capacity and increase risk to the wearer.

Sticker Shock

Many companies use hard hat stickers as motivational tools or to identify that a person has completed training or is authorized to work in a specific area. Typically, pressure-sensitive sticker adhesives will not create any problems for the hard hat material. However, stickers should not be allowed to cover up significant portions of the hard hat surface as this may hide cracks or other signs of deterioration. Stickers shouldn’t be used as a method for repairing areas of shell damage. They should be placed away from the edge of the hard hat (at least ½ in.) and not wrapped around to the inside. This is to prevent the sticker from possibly transmitting an electrical current to the inside of the shell.

In addition, hard hats should *not* be:

- Used as seating or a step. The compression may damage the shell
- Cleaned with solvents or abrasive cleaners. Follow the recommendations of the hard hat manufacturer. A pH-neutral soap and warm water (120 °F) will usually get the job done
- Painted, drilled or otherwise customized
- Stored in areas subject to environmental extremes or repeated, prolonged exposure to sunlight. While it’s true that work itself often takes place in prolonged sunny conditions (see maintenance suggestions below), storing a hard hat in such conditions just accelerates degradation



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Maintenance

Like all personal protective equipment (PPE), hard hats need to be inspected on a regular basis and repaired or replaced when parts become damaged or worn. Hard hats that are subject to forceful impact—from something falling on them or a hard hat itself falling—should be immediately taken out of service and replaced regardless of visual appearance—i.e., it's best to take a “one and done” approach. The inconvenience and expense of replacing a hard hat are nothing compared to the potential risk of injury due to a damaged or less-than-optimal hard hat. For hard hats currently in service, some signs to look for during routine inspection include:

- ▶ **Shells.** Cracks, dents, deep abrasions, brittleness, chalky appearance, penetrations or fading of color. These may indicate damage to the hard hat or the start of plastic degradation. Hard hats exposed to harsh environments such as airborne chemical exposure, extreme temperatures (hot or cold) or repeated, prolonged exposure to sunlight (UV) should be checked on a more frequent basis, as these conditions can accelerate degradation. While there is no regulatory requirement for when to replace the shell, most manufacturers recommend routine replacement within five years depending on use conditions. This may be based on service life (when the hard hat was actually put into service) or the manufacture date. Check the manufacturer's user instructions for guidance
- ▶ **Suspensions.** Frayed, torn or damaged crown straps. The keys (the tabs on the crown strap that fit into slots on the hard hat) should be intact and firmly locked into place. The headband should be flexible and the size adjustment mechanism should be able to maintain the selected size. At least one manufacturer recommends replacing the entire suspension system annually. Again, the user instructions provide the manufacturer's specific recommendations

As with all PPE, it is critical to follow the manufacturer's user instructions, which will provide specific details on assembly, maintenance, inspection and precautions to take with the product. Doing so will help maximize the service life and protection offered by the hard hat and ensure that it's doing its job to keep the wearer safe. ■



For further reading on PPE, see:

- ▶ Occupational Safety and Health Administration (OSHA). Personal Protective Equipment Publication 3151-12R 2003
- ▶ Occupational Safety and Health Administration (OSHA). Letter of Interpretation: 29 CFR 1926.31 and 1926.100; wearing caps or other apparel under a hard hat for cold weather protection
- ▶ Occupational Safety and Health Administration (OSHA) 29 CFR 1926.100 Head Protection