Industrial Head Protection User Information Guide

Hard Hat Inspection, Maintenance and Precautions

The hard hat is one of the most important pieces of equipment worn in the industrial workplace. Many workers have been saved from serious injury, or even death because they were wearing a hard hat. To assist in your organization's head protection program, Bullard would like to share some observations on proper maintenance and inspection of industrial hard hats, as well as a few precautions.

A conventional hard hat consists of two components – the shell and the suspension – which work together as a system. Both components require periodic inspection and maintenance. It is recommended that employers conduct a regular head protection inspection, maintenance and replacement program. Each program will vary according to the work environment at each job location.

Hard Hat Shell

Thermoplastics (polyethylene, polycarbonate and others) and thermoset materials (fiberglass and phenolic-impregnated textiles) are commonly used to mold the shells of industrial hard hats. These materials have proven to be durable, reliable and lightweight while providing effective protection. Given the proper care and normal workplace conditions, a hard hat has a reasonable service life.

Inspection

The shell should be inspected routinely for dents, cracks, nicks, gouges and any damage due to impact, penetration, abrasions, rough treatment or wear that might reduce the degree of protection originally provided. Any hard hat that shows signs of worn or damaged parts should be removed from service immediately and replaced.

Although Bullard adds an ultraviolet inhibitor to hard hat shells, all hard hats are susceptible to ultraviolet light damage, temperature extremes and chemical degradation. Thus, users who work in environments with high degrees of exposure to sunlight, heat, cold or chemicals should replace their hard hats more frequently than workers in other environments.

Degradation of thermoplastic material may be apparent when the shell becomes stiff, brittle, faded, dull in color or exhibits a chalky appearance. With further degradation, the shell surface may craze, flake or delaminate. A hard hat should be replaced immediately at the first sign of any of these conditions.

The following is a simple field test that can be performed by an employee or supervisor to determine possible degradation of polyethylene shells:

Field Test

Compress the shell inward from the sides about 1" (2.5 cm) with both hands and then release the pressure without dropping the shell. The shell should quickly return to its original shape, exhibiting elasticity. Compare the elasticity of the sample with that of a new shell. If the sample does not exhibit elasticity similar to that of a new shell, or if it cracks due to brittleness, it should be replaced immediately.

Hard Hat Suspension

The hard hat suspension system is just as important as the shell. Its main purpose is to help absorb the shock of an impact and it must be in good condition at all times.

Inspection

As with the shell, the suspension must also be inspected and replaced periodically. Over a period of time, the suspension will become worn and may become damaged.

Suspensions should be inspected closely for cracks, frayed or cut crown straps, torn headband or size adjustment slots, loss of pliability or other signs of wear. These conditions can be caused by perspiration, hair oils or normal wear.

Any suspension that is damaged must be removed from service and replaced immediately. **It is recommended to replace the entire suspension system every 12 months.**

Maintenance

Hard hat service life can be extended by cleaning both the shell and the suspension. This should be part of the inspection and maintenance program. Scrub the shell and suspension with a mild detergent to remove dirt and stains. Rinse thoroughly with clean, warm water, not to exceed 50°C (120°F). After rinsing, wipe dry and once again carefully inspect for any signs of damage.

Replacement Program Guidelines

Users of industrial head protection devices must realize that these products do not have an indefinite useful life. Bullard recommends that a regular head protection replacement program be conducted by employers as a responsive solution to the task of addressing service life of hard hats/caps.

Since the details of such a program must be developed based on work conditions at each job site, it is impossible to provide a specific time frame for cap replacement. As a general guideline, many large corporations replace all employee's caps every five years, regardless of the cap's outward appearance. It is recommended to replace your suspension system every 12 months. Where user environments are known to include longer exposures to temperature extremes, sunlight or chemicals, hard hats/caps should be replaced automatically after two years of use. This is based on information and hat/cap samples returned to Bullard after exposure to such conditions. In certain rare instances, a hat/cap should be replaced in less than two years.

The employer should have a policy to immediately replace a hard hat/cap if the employee (wearer) feels it is necessary.

We hope that these guidelines, developed by our Engineering Department and based on years of experience, enable you to assist in the development and evaluation of head protection programs. We would also emphasize that Bullard offers a limited two-year warranty on its entire head protection product line. No other manufacturer is more committed to the design and production of quality head protection than Bullard. Please feel free to contact Bullard Customer Service at 877-BULLARD (285-5273) if we can be of further assistance.

⚠ WARNINGS

In addition to an inspection and maintenance program, employers should review with their employees some precautions concerning hard hat use and treatment. The following are some warnings that should be discussed:

- If the hard hat has been struck by a forcible blow of any magnitude, both the hard hat shell and suspension should be replaced immediately, even if no damage is visible.
- A conventional hard hat provides limited protection by reducing the force of falling objects striking the top of the shell. It is not designed to provide front, side or rear impact or penetration protection. If greater protection is required, Bullard manufactures advanced industrial helmets which provide protection from off-center as well as top impacts.
- The hard hat shell or suspension should never be altered or modified. Drilling holes in the shell for ventilation purposes must be prohibited at all times.
- Avoid contact of the hard hat with electrical wires.
- Hard hats should not be carried on the rear window shelf of an automobile or stored in direct sunlight. Exposure to extreme sunlight over time may cause degradation which can affect the degree of protection originally provided.
- Because hard hats can be damaged, they should not be abused. They should be kept free of abrasions, scrapes and nicks and should not be dropped, thrown or used as supports. Do not sit on a hard hat.
- Wearers should never carry or wear anything inside their hard hat. A clearance must be maintained between the shell and head for the protection system to work properly.
- Do not paint a hard hat. Some paints and solvents may attack and damage the shell and reduce the degree of protection originally provided.
- As a general guideline, all new employees should be provided with a new, unused and unexposed hat/cap. The practice of reissuing cleaned hats/caps must be avoided. The cost of a hat/cap is negligible when the potential for injury, lost time, health care cost and liability are considered.

Failure to observe these warnings could result in death or serious injury.

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