

Performing the PPE Hazard Analysis

Select PPE only after the first four options in the hierarchy of controls have been evaluated and found to be infeasible.

by W. Jon Wallace

Thousands of people are blinded each year from work-related eye injuries that could have been prevented with the proper selection and use of eye and face protection. Eye injuries alone cost more than \$300 million per year in lost production time, medical expenses, and worker's compensation. (Source: Occupational Safety and Health Administration).

Failure to adequately assess the workplace for potential hazards and identify appropriate personal protective equipment

(PPE) not only results in thousands of eye injuries each year; it is also responsible for numerous injuries to the hands and arms, torso, feet, and head.

PPE Hazard Assessment

To ensure employees wear appropriate PPE for their work tasks, OSHA's 29 CFR 1910.132 (d)(1) requires that employers perform a PPE assessment to determine whether hazards are present, or likely to be present, that necessitate the use of personal

protective equipment. In addition, 29 CFR 1910.132 (d)(2) requires a written certification of the assessment.

Hierarchy of Controls

A systematic review of each work task is needed to identify potential hazards. Prior to requiring employees to wear PPE, however, the hierarchy of controls should be utilized to eliminate or reduce the existing hazard(s) to avoid the need for PPE. The hierarchy of controls states that hazards

WORK TASK	TYPICAL PERSONAL PROTECTIVE EQUIPMENT
Wire brush wheels	Safety glasses with side shields or impact goggles
Grinding stones	Faceshield with either safety glasses and side shields or impact goggles
Metalworking machines	Safety glasses with side shields or impact goggles, barrier creams
Compressed air	Impact goggles or safety glasses with side shields
Woodworking machines	Abdominal guard or anti-kickback apron, impact goggles or safety glasses with side shields
Handling wood, metal, glass, etc.	Kevlar, leather gloves, or hand pads
Landscaping tools	Safety glasses with side shields
Maintenance	Breast pockets sewn closed or removed, tool belt with tools on side, gloves, safety harness and lanyard, impact goggles, or safety glasses with side shields
Material handling	Gloves, hard hat, eye protection
Cold weather	Hard hat liners
Close quarters work	Hard hats
Falling objects	Hard hats
Sparks, hot metals	Flame-resistant caps, aprons, hoods, Nomex® canvas spats
Long hair protection	Cool lightweight cap with long visor (hair under cap), and hair nets
Acids, alkalis, etc.—splash hazard	<i>Large quantities:</i> Acid suits, hoods. <i>Small quantities:</i> Faceshield and splash-proof goggles
Limited direct splash from acids, alkalis, etc.	Faceshield and chemical goggles
Lifting 15-pound solid objects 1 foot or more at least once per day; rolling rolls of paper, steel, hogsheads	Toe protection
Chain saws	Chaps, eye protection, hearing protection, hard hats
Working in vicinity of flammable liquids handled at \geq autoignition temperature	Flame-retardant clothing
Sun exposure	Wide-brim hats, long-sleeve clothing and/or sunscreen
Working on energized electrical conductors \geq 50 volts	Flame-retardant clothing and voltage-rated tools and gloves, based upon NFPA 70E flash hazard analysis and OSHA 1910.335 requirements

should be controlled in this preference:

1. Elimination
2. Substitution
3. Engineering Controls
4. Administrative Controls
5. Personal Protective Equipment

PPE should be selected only after the first four options have been evaluated and found to be infeasible.

Personal Protective Equipment for Various Exposures

Once the hazard assessment is complete, appropriate PPE must be selected. Listed on page 60 is a summary of typical PPE for various work tasks based upon National Safety Council, OSHA, and ANSI requirements and recommendations.

Who Pays for PPE?

During training classes, I am routinely asked whether OSHA requires employers to pay for employee PPE. In an OSHA letter of Interpretation dated August 25, 2004, addressed to Brad Milleson of the Kellogg Company, OSHA states the following: “29

CFR 1910.132 requires employers to provide PPE and ensure its use. However, at the present time, OSHA does not view this section as imposing an enforceable obligation on employers to pay for PPE. Therefore, employees must be afforded the protection of PPE, regardless of who pays.” OSHA has initiated rulemaking proceedings to clarify who is required to pay for required PPE.

It is important to note that there are numerous OSHA standards that specifically require the employer to provide PPE at no cost to the employee. Those standards include: Occupational Noise Exposure (1910.95); Respiratory Protection (1910.134); Permit-Required Confined Spaces (1910.146); Fire Brigades (1910.156); Logging Operations (1910.266); Asbestos (1910.1001); Inorganic Arsenic (1910.1018); Lead (1910.1025); Cadmium (1910.1027); Benzene (1910.1028); Bloodborne Pathogens (1910.1030); 1,2-dibromo-3-chloropropane (1910.1044); Acrylonitrile (1910.1045); Ethylene Oxide (1910.1047); Formaldehyde (1910.1048); Methylenedianiline (1910.1050); 1,3-Butadiene (1910.1051); and

Methylene Chloride (1910.1052).

Apparel Policy

An apparel policy should be included in the PPE procedure. Loose clothing should be prohibited around rotating equipment, and long hair should be tucked under the collar or secured with a hair net. Rings, necklaces, and gloves should not be worn while working around rotating equipment because they may become entangled in the equipment.

Summary

Used properly, PPE provides a significant increase in protection for employees. The key components include a documented hazard assessment, employee training as well as periodic inspections to verify program effectiveness. ■

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