**Module O Answer Key PPE, tcfh2-3-14, rev1.0**

**This is the answer Key complete the corresponding test. Email the test T.C. Howard (fhoward@angeltrax.com). A 100% score will earn 1 credit hour in the Safety and Loss prevention program.**

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

[General]

AngelTrax

**Personal Protective Equipment**

**PPE Standards:**

**29 CFR 1926.28*, [Personal Protective Equipment](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10614)***

**(w/29 CFR 1910.132,** [***General Requirements***](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=9777)**) 29 CFR 1926.95, *[Criteria for Personal Protective Equipment](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10658)***

**29 CFR 1926.101,** [***Hearing Protection***](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10664) **(w/ 29 CFR 1926.52,** [**Occupational Noise Exposure**](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10625)

**29 CFR 1926.102,** [***Eye and Face Protection***](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10665) **(w/29 CFR 1910.133,** [***Eye and Face Protection***](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=9778)**)**

**29 CFR 1926.107,** [***Definitions Applicable to this Subpart***](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=10670)

OVERVIEW

This Personal Protective Equipment (PPE) Program has been prepared to inform our employees of potential hazards in the workplace and to identify the proper PPE to be used to reduce or eliminate these hazards. This Program relies on a cooperative effort by all personnel to understand the reasons for PPE and to protect themselves from harm.

The use of PPE does not lessen an employee’s obligation to use safe work practices and procedures. Employees are expected to be aware of the hazards within their area of responsibility and properly use prescribed PPE.

Our operations, work methods and individual job sites present specific hazards which must be identified, analyzed, and matched with the appropriate PPE through a continuing hazard assessment process.

A Certificate of Hazard Assessment will be kept on the job site for inspection purposes.

DUTIES OF THE PPE PROGRAM ADMINISTRATOR

The primary duties of the Program Administrator include: hazard assessment; PPE selection; PPE training; and monitoring of our PPE Program. Certain types of PPE may require hands-on training before on the job use (primarily for sizing and fitting) and this training may be further delegated to competent persons.

Our Program Administrator is:

Flash Howard

HAZARD ASSESSMENT AND PPE SELECTION

A careful, systematic personal protective equipment selection process is used to identify what, if any, protection is required to reduce or eliminate the possibility of eye, hand, foot, limb, or head injury.

Hazard assessment, performed by the PPE Program Administrator or a designated competent person, starts with a thorough knowledge of our job sites, work procedures and methods of operation as well as the hazards that may be created by other contractors working in the vicinity of our employees. The basic hazard categories are: impact; penetration; compression; chemical; heat; harmful dust; and light radiation.

Identifying the source of the above hazards allows for consideration of administrative or engineering controls to eliminate the hazard as opposed to providing protection against it. Examples would include: redirecting traffic flow, ventilation, temporary weather barriers, non-slip surfaces, etc..

Because administrative and engineering controls are passive -- no employee involvement is required -- they are preferable to PPE.

A PPE selection is made by analyzing the above information and evaluating the type of risk, the level of risk, the potential for injury and the possible seriousness of that injury. PPE, which is compatible with the above risks and work situation, is considered. Actual selection involves all the above factors plus an attempt to provide a level of protection greater than the minimum required.

In all situations where it has been determined that a particular type of PPE is to be used, it will be used. There will be no exceptions by virtue of position or rank to this policy. Within an area on a job site where the possibility of falling objects exists, hard hats will be worn. It follows that once an item of PPE (hard hat, in this case) is selected, it must be used by all persons in the identified area regardless of job title or function.

Having the PPE Program Administrator or designated competent person on a job site determine the PPE requirements allows for knowledgeable selection and consistency, and eliminates chaos that would result if each individual were to decide when, where, and if PPE should be used.

29 CFR 1910 Subpart I, Appendix B, *Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection*, provides excellent selection guidelines for eye and face protection; head protection; foot protection; and hand protection.

DISSEMINATION OF PPE SELECTION INFORMATION

Employees must understand when PPE is necessary and what type(s) of PPE are necessary.

All persons for whom PPE will provide a measure of safety will be given appropriate training on that item of PPE as well as an explanation of the importance of its use.

ANSI STANDARDS AND PPE

Most items of PPE are manufactured in accordance with a specific American National Standards Institute (ANSI) standard. For example, protective eye and face devices purchased after 07/05/94 must comply with ANSI standard ANSI Z87.1-1989, *American National Standard Practice for Occupational and Educational Eye and Face Protection*; protective helmets purchased after 07/05/94 must comply with ANSI standard ANSI Z89.1- 1986, *American National Standard for Personnel Protection-Protective Headwear for Industrial Employees-Requirements.*

PPE safety products are tested to ensure they meet ANSI standards. Because products are tested in the manner in which they are designed to be used, ANSI certification is valid only if the user follows the manufacturer’s instructions for proper sizing, fitting, wearing, and adjusting. A review of OSHA citations reveals that fines can be levied because employees were improperly using PPE. For example, a hard hat worn with the bill toward the rear may provide adequate protection from impact, however, because it is tested with the bill toward the front, this improper use is cause for a safety violation.

Prior to purchase, items of selected PPE will be checked to ensure they were manufactured in accordance with the proper ANSI standard.

The importance of hazard assessment takes on added significance when judgments are made matching the hazard to the protection desired in cases where ANSI certification is not available. What matters most is: does the selected PPE do what it is intended to do?

EMPLOYEE OWNED EQUIPMENT

Employee owned PPE must be approved for use by the PPE Program Administrator. The Administrator must determine that the PPE is appropriate for the hazard and properly maintained. The Administrator will ensure that PPE maintenance and sanitation are in accordance with the manufacturer’s instructions.

SIZING AND FITTING

The word “personal” in the phrase “personal protective equipment” correctly implies that the equipment is for a specific person. As such, sizing and fitting are important for a variety of reasons.

1. Function: an improperly fitted piece of PPE may not do its job. For example, eye protection against dust must have an excellent face seal.
2. Comfort: the likelihood of continued use is increased if the PPE selected is comfortably fitted. Example: gloves that fit poorly and, over time, make a person’s hands hot and clammy are likely to be removed exposing that person to

the hazard for which the gloves were required in the first place.

1. Safety: ill-fitting PPE may actually cause an accident. Example: loose hard hat may slip and block one’s vision.

Most PPE come in a variety of sizes and within those size groups, adjustments may be made to affect a perfect fit. It is important to understand the procedures for donning, adjusting, using, and removing PPE. Each person who is required to use any type of PPE will be taught, before initial issue, the specific procedures for properly donning, adjusting, using, and removing the specific PPE. This instruction will generally be given by the employee’s Supervisor. When available, the manufacturer’s instructions will be issued with the PPE.

CARE AND MAINTENANCE OF PPE

PPE will be visually inspected before each use and if defects are noticed, it will not be used. Some types of PPE are expendable (cotton gloves) and have a limited life span after which they are discarded and new PPE is reissued. Plastic safety glasses become scratched and they too must be exchanged for new ones when vision is impaired. Other types of safety equipment consist of both non-expendable and expendable components.

A hard hat is non-expendable, yet the head band does wear out and becomes expendable. PPE will be maintained in accordance with the manufacturer’s instructions and, where appropriate, kept in a sanitary condition.

Cleanliness takes on an added importance when dealing with PPE designed to protect the eyes and face. Dirty or fogged lenses can impair vision and, rather than offer protection from a hazard, actually becomes a contributory factor in causing an accident.

Should PPE become contaminated with a chemical substance and decontamination is impossible, the PPE will be properly disposed of following the disposal instructions on the Material Safety Data Sheet for that substance. All other damaged of defective PPE will be taken out of service and disposed of as normal waste.

TRAINING

Training, which must be documented, will be given to affected employees to ensure they understand:

1. when PPE is necessary;
2. what PPE is necessary;
3. how to properly put on, take off, adjust, and wear PPE;
4. the limitations of the PPE; and,
5. the proper care, maintenance, useful life and disposal of the PPE.

Documented retraining will be given in situations when changes in PPE requirements render the previous training obsolete or it is noticed that an employee is not following our PPE policies -- specifically, not properly wearing the selected PPE in identified locations or work situations.

As a contractor, we are not required to have a PPE Program, per se, nor is the hazard assessment a *specific* requirement. In fact, there is no hand protection standard. Construction standards are short and to the point.

The complete standard for head protection is printed below:

Standard Number: 1926.100 Title: Head protection.

Applicable 1910 Standards 1910.135

* 1. Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets.
  2. Helmets for the protection of employees against impact and penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.
  3. Helmets for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2-1971.

Most PPE requirements are obvious and PPE wear is so simple that training is almost unnecessary.

What is important -- vitally important -- is actually using the proper PPE when it is required.

To ensure employee compliance with PPE requirements, we have opted to treat all employees as intelligent, responsible persons who, when reminded of what PPE actually protects, will enthusiastically endorse PPE use.

EYE AND FACE PROTECTION

Your eyes are a marvel of engineering. Most of us take them for granted as we do all our senses until an accident, injury, or disease forces us to realize the miracle we lost or almost lost. Can you imagine a system that can take (absorb) light and convert it to electrical signals (by way of the 120 million rods and 6 million cones on the retina) and transfer these signals through an optic nerve which has about one million fibers directly into the brain?

Most of us see the world in living color and with depth perception. The body itself does much to protect the eyes. Bony eye sockets in the skull protect the eye from many mechanical injuries. Orbital fluids and tissues cushion direct blows. Eyelids close reflexly from visual or mechanical

stimuli. Eyes reflexively rotate upward with the lid closing to protect the cornea. Tears can flush away chemicals and foreign bodies. We all come with these safeguards. Sometimes, they are not enough.

Eye protection is required when there is a possibility of eye injury. Eye injury is not confined to flying objects. Eye injury can be caused by bright light, dust, chemicals, heat, and, literally, anything that can reach them.

Different hazards require different types of protection.

Eye (and face) protection is required when one is exposed to flying particles, chemicals, or injurious light radiation. Types of eye protection include: impact resistant safety glasses; safety glasses with side shields; goggles; goggles with a face seal; face masks; and shaded goggles with varying degrees of darkness.

Affected employees who wear prescription lenses will wear eye protection over the prescription lenses without disturbing the proper positioning of the prescription lenses, or will wear eye protection that incorporates their prescription into the design.

All prescription glasses should be made with impact-resistant lenses. Hardened lenses, through a tempering process, are extremely hard and resistant to impact and breakage. Safety lenses are similar to hardened lenses but are 1 mm thicker. Safety lenses are used in goggles where there is a danger of flying glass or chips of metal.

All employees who wear contact lenses must also wear appropriate eye and face protection in hazardous environments.

Welding helmets and face shields, if required, should be worn over primary eye protection (spectacles or goggles).

An inexpensive pair of safety glasses can save your priceless eyesight.

HEARING PROTECTION

Wherever it is not feasible to reduce the noise levels or duration of exposures to those specified in Table D-2, below, ear protective devices shall be provided and used.

Ear protective devices inserted in the ear shall be fitted or determined individually by competent persons.

Plain cotton is not an acceptable protective device.

TABLE D-2 - PERMISSIBLE NOISE EXPOSURES

Sound level

Duration per day, hours dBA slow response

|  |  |
| --- | --- |
| 8 | 90 |
| 6 | 92 |
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1 1/2 | 102 |
| 1 | 105 |
| 1/2 | 110 |
| 1/4 or less | 115 |

Hearing damage is caused by noise level and duration of exposure to the noise. If, after using the formula below, the equivalent noise exposure exceeds unity (1), then a Hearing Conservation Program will be initiated.

F(e)=(T(1)divided by L(1))+(T(2)divided by L(2))+ ... + (T(n) divided by L(n)) where: F(e) = The equivalent noise exposure factor.

T = The period of noise exposure at any essentially constant level.

L = The duration of the permissible noise exposure at the constant level (from Table D-2).

If the value of F(e) exceeds unity (1) the exposure exceeds permissible levels.

A sample computation showing an application of the formula in paragraph (d)(2)(ii) of this section is as follows. An employee is exposed at these levels for these periods:

110 db A 1/4 hour. 100 db A 1/2 hour. 90 db A 1 1/2 hours.

F(e) = (1/4 divided by 1/2)+(1/2 divided by 2)+(1 1/2 divided by 8) F(e) = 0.500+0.25+0.188

F(e) = 0.938

Since the value of F(e) does not exceed unity, the exposure is within permissible limits.

Understanding some interesting facts about your hearing will emphasize the need for hearing protection.

Your outer ears on the side of your head are the least important part of your hearing system. Should you lose your ear, you would not necessarily lose your hearing. Your outer ear, made of cartilage, includes the external auditory canal which leads to the eardrum which is only 2/5" in diameter.

The eardrum separates the outer ear from the middle ear. Within the middle ear are three (3) bones commonly called the hammer, anvil, and stirrup. The stirrup (stapes) is the smallest bone in your body -- thinner than a grain of rice. Also in the middle ear is the Eustachian tube which connects the middle ear to the back of the throat to maintain equal air pressure on both sides of the ear drum.

The inner ear, where sound waves are converted to electrical impulses, actually has a function unrelated to hearing. It contains the semicircular canals which completely control your balance. Also in the inner ear is the cochlea, a small spiral coil in which you would find the basilar membrane which has over 15,000 hair cells. These hair cells are the end of the auditory nerve which goes directly to the temporal lobe of the brain.

The hardest bone in your whole body is the temporal bone which protects two thirds of the auditory canal and all of the middle and inner ear. Nature, itself, seems to have placed a high priority on your hearing.

Protect your hearing. If you are issued hearing protection, use it!

MISCELLANEOUS PERSONAL PROTECTION

PPE immediately brings to mind eye, head, hand, and foot protective equipment. However, there may be other types of protective equipment which are readily available and which have the capability of protecting employees from identified hazards in the workplace. Some of these items may not fall under a specific OSHA standard or may not be ANSI approved or disapproved, however, in the judgment of our PPE Program Administrator, they may be appropriate for use in our operations.

SUMMARY

The true beneficiary of PPE utilization is the user. The whole thrust of this Program is to protect our employees from injury. This is accomplished by, among other things, explaining the process of hazard assessment; the reasons for PPE use; and the necessity of using the PPE selected.

What possible justification could there be for maiming, losing, or even slightly injuring a body part because available (and required) PPE was not used? “I forgot”; “I was in a hurry”; “I misplaced my PPE”; “I felt silly wearing PPE”; or “I really didn’t believe PPE was necessary” will not undo what could be a lifetime of regret.