

Job Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 14: Hearing Protection

Introduction: Most of us take hearing for granted. When we go home at the end of a workday and when we get up in the morning, we expect to hear. Our amazingly sensitive ears can distinguish 400,000 different sounds and can detect sounds so quiet that they cause the eardrum to vibrate less than 1/80,000,000 of an inch. But that remarkable sensitivity doesn't have a lifetime guarantee; in order to maintain hearing sensitivity, it must be protected.

Noise-induced hearing loss is the term for hearing damaged by excessive noise. People differ in their sensitivity to noise, however, and there's no way to determine who is most at risk. Factors such as sound pressure (decibel level), frequency (hertz), and exposure time all play a role in determining whether noise is harmful or just annoying. However, you should consider your hearing at risk if noise affects you in one of the following ways:

- **Have to shout** above noise to make yourself heard
- **Have difficulty** hearing normal sounds for several hours after exposure to noise
- **Have ringing** in the ears for several hours after exposure to noise

Is your workplace dangerously loud? If you're not sure whether the noise in your workplace is dangerously loud, ask yourself: Is normal conversation difficult because of the noise? Have co-workers also complained about the noise? If so, protect your hearing with good quality ear-plugs or earmuffs.

OSHA has established decibel levels at which noise is believed to be hazardous and has established rules based on two decibel-level thresholds: 85 dB and 90 dB. For all employers, including those in construction, OSHA requires a hearing conservation program for workers exposed to 85 dB or more averaged over the course of an eight-hour work shift (time-weighted average or TWA). Eighty-five decibels over eight hours is considered the "action level" – the level at which the employer must take action.



The goal of the hearing conservation program is to ensure that noise is monitored and that workers are getting hearing tests and are not overexposed to noise on the job. When the eight-hour TWA reaches 90 dB, which is the permissible exposure limit or PEL, employees are considered overexposed, and employers must implement engineering and work-practice controls to reduce exposure. Engineering controls are the best way to control noise if the control is effective, practical, and affordable for your workplace. If engineering controls are not feasible, hearing protection must be provided.

OSHA regulations regarding training state that "The employer shall institute a training program for all employees who are exposed to noise at or above an 8-hour average of 85 decibels, and shall ensure employee participation in such program. The training program shall be repeated annually for each employee included in the hearing conservation program." The employer shall ensure that each employee is informed of the effects of noise on hearing; the purpose of hearing protectors and the advantages or disadvantages of various types; instructions on selection, fitting, use, and care; and, the purpose of audiometric testing and an explanation of the test procedures.



Audiometric testing determines whether an employee's hearing is stable or getting worse over time. If employees are exposed to noise levels that exceed 85 decibels averaged over an eight-hour period, they must receive annual audiometric tests.

OSHA regulations regarding hearing protectors state that "Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary."

- **Employers shall ensure** that hearing protectors are worn by any employee who is exposed to an 8-hour average of 85 decibels or greater.
- **Employees shall be given** the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.
- **The employer shall provide** training in the use and care of all hearing protectors provided to employees.
- **The employer shall ensure** proper initial fitting and supervise the correct use of all hearing protectors.

Ear-plugs and Earmuffs are the primary types of hearing protectors. Both decrease the pressure of sound that reaches the eardrum and are the next line of defense against noise when you can't reduce exposures to safe levels with engineering controls. **Ear-plugs** fit in the outer ear canal. To be effective, they must totally block the ear canal with an airtight seal. An improperly fitted, dirty, or worn-out ear-plug will not seal and can irritate the ear canal.

Earmuffs fit over the entire outer ear to form an airtight seal (they won't seal around eyeglasses or long hair) and are held firmly in place around the ear by an adjustable head band. In extremely noisy conditions, it may be necessary to wear both ear-plugs and earmuffs together.

Properly fitted ear-plugs and earmuffs reduce noise levels 15 to 30 decibels. Decent quality ear-plugs and earmuffs are approximately equal in sound reduction, though earplugs are more effective for reducing low-frequency noise and earmuffs for reducing high-frequency noise.

Conclusion: How much noise one can withstand without damage to hearing depends on such factors as exposure, frequency of exposure, decibel levels, and type of noise. Remember that hearing protectors control noise, they don't eliminate it; they're effective only if you wear them the entire time you're exposed to hazardous noise. Follow these guidelines for hearing protection.



Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Employee Signatures:

(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.