

MIOSHA Fact Sheet

Noise Exposure in Construction



Excessive exposure to noise is one of the most common health hazards encountered at construction sites. Sources of excessive noise levels range from small power hand tools to large diesel-powered trucks and equipment.

Excessive exposure to noise causes hearing loss by damaging the delicate hair like cell structures in the inner ear that detect sound. Damage to these cells occurs gradually through prolonged exposure to loud noises. As more hair cells are permanently damaged, the amount of hearing loss increases. If the noise in your work environment requires you to raise your voice to talk to someone at arm's length away, your environment is probably noisy enough to cause hearing loss. One warning sign of pending hearing loss, sometimes noticed by an employee, is called tinnitus. Tinnitus is described as a ringing or whistling in the ear. It is especially noticeable when it is quiet, such as when trying to sleep at night. If attention is not given to reduce noise exposure at this point, permanent hearing damage may occur.

Employer Responsibilities

The MIOSHA Construction Standard [Part 680, Occupational Noise Exposure](#) (Part 680) establishes permissible exposure limits (PEL) for continuous or intermittent noise in the construction industry. The PEL for an 8-hour day is a time weighted average of 90 decibels measured on the A-scale (dBA). The permissible exposure time decreases as the sound level increases (e.g., only a 15-minute maximum exposure is allowed to 115 dBA sound level). If the PEL is exceeded, the employer must implement feasible administrative or engineering controls to reduce exposure levels within the limits. If controls fail to reduce exposure levels within limits, the employer must implement a continuous and effective hearing conservation program. Part 680 also establishes a peak sound pressure limit of 140 dB for impulse or impact noise; this level may not be exceeded at any time.

At a minimum, an effective hearing conservation program must include the following elements:

- Noise Monitoring Program - Noise exposures must be measured to identify employees for inclusion in the program and to enable proper selection of hearing protection.
- Engineering and Administrative Controls - Whenever feasible, engineering and/or administrative controls must be implemented to reduce exposure to below limits.
- Hearing Protection - Employers must provide, without charge, and require use of suitable hearing protection. A variety of suitable hearing protection (plugs, muffs) should be available for selection.
- Training Program - The employer must provide training that addresses the effects of noise on hearing, the work activities requiring hearing protection, the purpose of hearing protection, the advantages, disadvantages and attenuation of various types of hearing protection, and on selection, fitting, use and care of hearing protectors.

As a means of evaluating the effectiveness of the hearing conservation program, employers should also implement an initial and annual audiometric testing program. It is recommended that the testing program be established in accordance with the General Industry Standard [Part 380, Occupational Noise Exposure in General Industry](#).

LEO is an equal opportunity employer/program.



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How to Minimize Noise Hazards

- Purchase Quieter Equipment - Compare equipment noise operating levels between different models/grades of equipment and manufacturers. Always consider if there is a quieter way of doing the job.
- Modify Old Equipment - Examples of worksite modifications include retrofitting existing equipment with noise damping materials and/or mufflers.
- Barrier Protection - Locate noisy equipment behind purpose-built barriers. The noise source should not be visible. Barrier(s) should be located as close as possible to the noise source or the receiver.
- Work Activity Scheduling - Jobs can be rotated so that exposure times are reduced. Planning how noise sources are located and organized on a work site can reduce noise hazards.
- Maintenance - Increased attention to maintenance of tools and equipment will reduce noise levels.
- Noise Perimeter Zones (NPZ) - A NPZ limits exposure to noisy processes or equipment to as few workers as possible.
- Effective Hearing Protection - When engineering and/or administrative controls do not reduce exposures within limits, provide and require the use of hearing protection (plugs and/or muffs) with suitable noise reduction ratings.

The MIOSHA standard that addresses exposure to noise can be viewed at www.michigan.gov/leo/bureaus-agencies/miosha/standards, under Construction. Also, the MIOSHA document CET-5620, [Hearing Loss Prevention Programs](#), provides guidance for any employer implementing a hearing conservation program, including:

- Training on proper use of different types of hearing protection.
- Noise exposure monitoring.
- Evaluation of hearing protection effectiveness.
- Recording noise induced hearing loss as an illness on the Injury and Illness Log 300 form.

For additional information regarding the hazards of noise and the measures that can be implemented to protect employees from exposure, please visit the following web sites at:

- <http://www.cdc.gov/niosh/topics/noise/>
- <https://www.osha.gov/SLTC/noisehearingconservation/index.html>