



MIOSHA Fact Sheet

Construction Safety & Health

Division

Noise Exposure in Construction

Excessive exposure to noise is one of the most common health hazards encountered at a construction site. Sources of excessive noise levels range from 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 the 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 damage may occur.

Employer Responsibilities

The MIOSHA [Part 680](#), Noise Exposure For Construction Standard establishes permissible exposures limits (PEL) for continuous or intermittent noise. 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., 15 minute maximum exposure 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 hearing conservation program. Part 680 also establishes a peak sound pressure limit of 140 dB for impulse or impact noise, which 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/Administrative Controls - Whenever feasible, engineering and/or administrative controls must be implemented to reduce exposure to below limits.
- Hearing Protectors - 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, [Part 380](#), Occupational Noise Exposure Standard.

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 and 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 (NRR).

MIOSHA standards that address exposure to noise can be viewed at www.michigan.gov/mioshastandards, click Construction. Also, reference the MIOSHA document CET 5620, [Hearing Loss Prevention Programs](#), which provides guidance for any employer on 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 & 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>



LARA is an equal opportunity employer/program.
Auxiliary aids, services and other reasonable accommodations are available upon request to individuals with disabilities.

CONSTRUCTION SAFETY AND HEALTH DIVISION
530 WEST ALLEGAN STREET • P.O. BOX 30645 • LANSING, MI 48909-8145
OVERNIGHT MAIL ADDRESS: 525 WEST ALLEGAN STREET, LANSING, MI 48933
www.michigan.gov/miosha • 517-284-7680
(Revised 10/06/2015)

