

38. Hearing Conservation

The primary purpose of the hearing conservation program is to prevent occupational noise-induced hearing loss for employees. A secondary purpose of the program is to provide guidance to comply with OSHA standards.

38.01. The Standard requires an effective hearing conservation program when noise levels exceed 85dBA for an 8 hour time weighted average. The program includes the following elements:

- 38.01.01. Noise monitoring
- 38.01.02. Audiometric testing
- 38.01.03. Hearing protection
- 38.01.04. Education and training
- 38.01.05. Related Documents
- 38.01.06. Regulatory Standards
- 38.01.07. Hearing Conservation Forms

38.02. Definitions

- 38.02.01. Action Level: Employee exposure to noise levels, without regard to any attenuation provided by the use of personal protective equipment, which exceeds 85 dBA or 50 percent of the permissible exposure limit.
- 38.02.02. Decibel: dB/dBA) Unit of sound measurement. dBA is a measurement using the A-weighted scale which approximates how humans hear sound.
- 38.02.03. Hertz: (Hz) Measurement of frequency also expressed as number of cycles per second.
- 38.02.04. Permissible Exposure Limit (PEL): A legal limit for an employee exposure to a chemical or physical agent, such as noise. PEL for noise is 90 decibels for an 8 hour time weighted average.
- 38.02.05. Standard Threshold Shift (STS): A change in hearing threshold of an average of 10 dB or more at 2,000, 3,000 or 4,000 Hz in either ear measured against the baseline audiogram.
- 38.02.06. Time-weighted Average (TWA): The average exposure to a chemical or physical agent to which employees may be exposed without adverse effect over a period, such as an 8-hour day or 40-hour week.

38.03. Administration

- 38.03.01. The administration of the program is the responsibility of each employing unit with assistance from the Physical Plant Safety.
- 38.03.02. Administrative responsibilities include the following:
- 38.03.03. Coordinating and supervising noise exposure monitoring.

- 38.03.04. Coordinating and supervising the audiometric testing program.
- 38.03.05. Assisting with hearing protector selection.
- 38.03.06. Developing policies relating to the use of hearing protection.
- 38.03.07. Coordinating and supervising required recordkeeping.
- 38.03.08. Evaluating the overall program periodically.
- 38.03.09. Coordinating required changes and improvements in the program.
- 38.04. Supervisors
 - 38.04.01. Identifying areas, work tasks and employees to be included in the hearing conservation program.
 - 38.04.02. Providing the resources for the program to be implemented, including availability for audiometric testing and hearing protection.
 - 38.04.03. Coordinating and assisting with employee training programs.
 - 38.04.04. Maintaining or coordinating documentation of noise exposures, training, audiometric testing and hearing protection use.
- 38.05. Procedure
 - 38.05.01. Noise Measurements and Monitoring
 - 38.05.02. The University has implemented a monitoring program to determine whether an employee's exposure may equal or exceed the action level of 85 dBA as an 8-hour time-weighted average.
 - 38.05.03. The Physical Plant Safety can assist with identifying employees for inclusion in the hearing conservation program by monitoring and consultation. Measurements can be used to enable the proper selection of hearing protection and to determine feasible engineering or administrative exposure control measures.
 - 38.05.04. Monitoring may be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that additional employees may be exposed at or above the action level or the attenuation provided by hearing protection being used by employees is not adequate to meet requirements.
 - 38.05.05. The employee's Supervisor will notify an employee exposed at or above an 8-hour TWA exposure of 85 dBA of the monitoring results.
 - 38.05.06. The Physical Plant Safety will provide affected employees, or their representatives, with an opportunity to observe any noise measurements conducted.
 - 38.05.07. Monitoring will be coordinated by a campus industrial hygienist with assistance from the affected department or office.
- 38.06. Audiometric Testing

- 38.06.01. The University will make audiometric testing available to employees whose exposure equals or exceeds an 8-hour time-weighted average of 85 dBA at no cost to the employee.
- 38.06.02. Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests shall be responsible to an audiologist, otolaryngologist or physician.
- 38.06.03. Audiometric testing will be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.
- 38.06.04. The Supervisor will notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination
- 38.07. Baseline audiogram
 - 38.07.01. Within 6 months of an employee's first exposure at or above the action level, the University will establish a valid baseline audiogram to compare against subsequent audiograms.
- 38.08. Annual audiogram
 - 38.08.01. Audiograms will be completed at least annually after obtaining the baseline audiogram for employees exposed at, or above, an 8-hour time-weighted average of 85 dBA.
- 38.09. The EH&S Department, Occupational Health Officer will maintain a record of employee audiometric test records. This record will include the following:
 - 38.09.01. Name and job classification of the employee.
 - 38.09.02. Date of the audiogram.
 - 38.09.03. The examiner's name.
 - 38.09.04. Date of the last acoustic or exhaustive calibration of the audiometer.
 - 38.09.05. Employee's most recent noise exposure assessment.
- 38.10. Audiometric Evaluation
 - 38.10.01. Each employee's annual audiogram will be compared to their baseline audiogram by a qualified evaluator to determine if a Standard Threshold Shift (STS) has occurred.
 - 38.10.02. In determining if a STS has occurred, an allowance can be made for the contribution of aging (presbycusis).
 - 38.10.03. The audiologist, otolaryngologist, or physician will review audiograms and determine whether there is a need for further evaluation. The University will provide the following information to the person performing this evaluation:

- 38.10.04. A copy of the requirements for hearing conservation as set forth in the standard.
- 38.10.05. The baseline audiogram and most recent audiogram of the employee to be evaluated.
- 38.10.06. Any noise exposure measurements pertaining to the employee's work tasks.
- 38.10.07. The person conducting the audiograms may be required to provide the following documentation to the University:
- 38.10.08. Measurements of background sound pressure levels in the audiometric test room.
- 38.10.09. Records of audiometer calibrations.
- 38.10.10. If the annual audiogram shows that an employee has suffered a STS, the University may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.
- 38.10.11. Unless a physician determines that the STS is not work-related or aggravated by occupational noise exposure, the University will follow these steps when a standard threshold shift occurs:
- 38.10.12. Employees not using hearing protection will be trained, fitted, and required to use hearing protection if they are exposed to an 8-hour TWA of 85 dBA or greater.
- 38.10.13. Employees already using hearing protection will be retrained, refitted, and required to use hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
- 38.10.14. The audiology clinic will inform the employee in writing within 21 days of this determination of the existence of a permanent STS. A copy of the STS letter will also be sent to the employee's Supervisor.
- 38.10.15. The audiology clinic will counsel the employee on the importance of using hearing protection and refer the employee for further clinical evaluation if necessary.
- 38.10.16. Persistent significant threshold shifts shall be entered on the OSHA 300 Log if determined to be work-related.
- 38.11. Protective Equipment
- 38.12. The Supervisor will ensure that hearing protection is worn by the following employees:
 - 38.12.01. those subjected to sound levels equal to, or exceeding, an 8-hour TWA of 90 dB;
 - 38.12.02. those who have experienced a persistent STS and are exposed to an 8-hour TWA of 85 dBA or greater;
 - 38.12.03. Any employee who has not had an initial baseline audiogram and who is exposed to an 8-hour TWA of 85 dBA or greater.
 - 38.12.04. Hearing protection will be available for any employees exposed to noise levels greater than 85 dBA.
 - 38.12.05. Employees will be given the opportunity to select their hearing protection from a variety of suitable hearing protectors at no cost to them.

- 38.12.06. The Supervisor will provide training in the use and care of hearing protection and will ensure proper initial fitting and supervise the correct use of hearing protection.
 - 38.12.07. Employees will be held accountable for not properly using and maintaining the equipment furnished.
 - 38.12.08. The EH&S department will evaluate the attenuation characteristics of the hearing protectors to ensure that a given protector will reduce the individual's exposure to levels within the PEL.
 - 38.12.09. If the 8-hour TWA is over 90 dBA, the protector shall attenuate the exposure to at least an 8-hour TWA of 90 dBA or below.
 - 38.12.10. If the protector is being worn because the employee experienced a STS, then the protector shall attenuate the exposure to an 8-hour TWA of 85 dBA or below.
 - 38.12.11. If employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation, the employee will be provided more effective hearing protectors.
- 38.13. Employee Training
- 38.13.01. An annual training program for each employee included in the hearing conservation program will be conducted by the Supervisor or EH&S Department and will include information on the following:
 - 38.13.02. The effects of noise on hearing.
 - 38.13.03. The purpose and use of hearing protectors.
 - 38.13.04. The advantages, disadvantages, and attenuation of various types of protection.
 - 38.13.05. Instruction in the selection, fitting, use and care of protectors.
 - 38.13.06. The purpose of audiometric testing and an explanation of the test procedures.
 - 38.13.07. Information provided in the training program will be updated to be consistent with changes in protective equipment and work processes.
- 38.14. Recordkeeping
- 38.14.01. Employee data relating to noise exposure measurements, audiometric testing and personal protective equipment used shall be kept for the duration of the affected employees employment plus 30 years. The records shall be kept in a confidential, secure manner. The following information should be forwarded to the Occupational Health Program:
 - 38.14.01.01. Noise exposure monitoring results.
 - 38.14.01.02. Audiometric test information, not including private, confidential medical information.
 - 38.14.01.03. Training information.
 - 38.14.01.04. Hearing protection information.

38.14.01.05. Records required by this section will be provided upon request to employees, former employees, and representatives designated by the individual employee.

38.15. Program Evaluation

38.15.01. At least annually, the implementation of the hearing conservation program will be evaluated by the Supervisor or other designated party. The overall program will be evaluated periodically by the Physical Plant Safety. After evaluation, program changes or revisions deemed necessary will be made as soon as possible.