Hearing Conservation Program for Construction

1926.52 Occupational Noise Exposure

1926.101 Hearing Protection

***This sample program is for guidance only. Employer is responsible for identifying and controlling hazards. Employer must identify change in conditions which may introduce new hazards.***

Presently (spring 2004), a Hearing Conservation Program is not required in the Construction Industry. OSHA is considering rulemaking to revise the construction noise standards to include a hearing conservation component for the construction industry that provides a similar level of protection to that afforded to workers in general industry. OSHA has invited the public to address the following subjects: Noise exposure monitoring, audiometric testing, and portability of records for workers in the construction industry with significant noise exposures.

Currently, stakeholder meetings are being held; they give employers an opportunity for informal discussion and will allow for the exchange of ideas and points of view; participants are not expected to prepare and present formal testimony. OSHA is interested in hearing first hand from employers and employees in the construction industry their ideas of what can be done to reduce the noise exposures and hearing loss of workers within this industry.

OSHA issued a section 6(b)(5) health standard mandating a comprehensive hearing conservation program for noise-exposed workers in general industry in 1983. However, no rule was promulgated to cover workers in the construction industry. Studies show that as many as 750,000 construction workers are currently exposed to noise levels of 85 dBA or greater at work. The largest number of worker exposures to excessive noise occurs during road construction, carpentry, and concrete work. International experience and data show that hearing conservation programs in the construction industry can be effective in reducing occupational hearing loss.

***To prevent hearing loss to the best of your ability, the following sample Hearing Conservation Program is provided as guidance.***

# Hearing Conservation Program

The Program Administrator for \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Company) will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Administrative responsibilities include: Coordination of and supervision of noise exposure monitoring.

* Identification of employees to be included in the HCP.
* Coordination and supervision of audiometric testing program.
* Supervision of hearing protector selection.
* Development of policies relating to the use of hearing protectors.
* Supervision of employee training.
* Coordination and supervision of record keeping.
* Evaluation of overall program.

While noise control systems are being evaluated and installed or where it is not feasible to decrease noise exposures to acceptable levels, it is required to establish a hearing conservation program. The required elements of the program are:

## **Monitoring**

Noise exposure levels must be measured wherever they may reasonably be expected to be above an eight-hour time weighted average of 85 dBA.

For our Company, the following operations are known to be loud and until measured, assume levels are in excess of 85 dBA:

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Monitoring will be conducted by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Where possible, check with the corporate/main office to determine if historic data (previous similar monitoring) was conducted and can be used for specific operations.

Employee will have the opportunity to observe the monitoring in a manner that does not disrupt the work flow.

## **Noise Controls**

Noise controls must be evaluated and implemented wherever employee exposures are at or above an eight-hour time weighted average of 90 dBA.

For our Company, the following controls need to be utilized to reduce noise levels to the greatest extent possible.

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**Remember:** We expect superintendents/foremen to utilize controls where possible:

* Block the noise by building temporary barriers of plywood or other noise reducing material to block or absorb the noise from reaching the workers.
* Move equipment further away with the use of proper extension cords, additional welding leads, and air hoses.
* Reduce the noise by buying/renting/leasing equipment which is quieter and using appropriate hearing protection devices. Call supplier for alternatives.

## **Audiometric Testing Program**

All employees with an eight-hour time weighted exposure of 85 dBA or above must be included in an audiometric testing program. A baseline audiogram must be established within the first six months of exposure and annual testing and evaluation must be done.

The Program Administrator will ensure that all affected employees participate in the company Audiogram Program which includes baseline testing as soon after orientation as possible but within 6 months of first exposure. Annual audiograms will be taken to compare to baselines and assess whether employee(s) have experienced measurable hearing loss. Exposure to noise will be minimized for 14 hours prior to obtaining this baseline exam and subsequent annual tests.

Annual Audiograms will be performed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ who will review all audiogram and refer employees with questionable audiograms to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Testing will be conducted per ANSI S3.6-1969 and in accordance with 1010.95.

If a standard threshold shift (an average shift in either ear of 10 dB or more at 2000, 3000, or 4000 Hz) is identified:

1. The employee will be notified of the threshold shift within 21 days of this determination;
2. The employee will be informed of the need for further evaluation if a medical problem is suspected;
3. The use of hearing protection will continue to be enforced;
4. The employee will be refitted and retrained in the use of hearing protection.

## **Hearing Protection**

The employer must provide hearing protection for all employees that have an eight-hour time weighted exposure of 85 dBA or above, who have any continuous exposure at or above 115 dBA, or who have an exposure to any impulse noise levels above 140 dB.

Our Company will provide the following types on Hearing Protection (HP). If HP has been identified by the Company to be worn, employees are required to wear that HP during operations where noise levels are in excess. These parameters will be covered in training - see below.

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Those operations identified in Section 1 of this program will require Hearing Protection until determined through monitoring that HP is no longer warranted.

The job positions for our company which require hearing protection are:

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## **Training**

Employers must provide annual training to all employees exposed to noise at or above an eight-hour time weighted average of 85 dBA. Training must include the following items:

* the effects of noise on hearing
* information on hearing protectors and their use,
* information on audiometric testing and its purpose, and
* the employees right to access to records.

The employer must maintain a written description of the training program.

The attached training document will be included as part of this written program.

## **Record keeping**

Audiometric test records need to contain the following information:

1. name and job classification of employee,
2. date of audiogram,
3. examiner’s name,
4. date of last calibration of the audiometer,
5. employees most recent noise exposure assessment, and
6. employer (or his designated testing agent) shall maintain accurate records of the measurements of the background sound pressure levels in the audiometric test rooms.

**Records Retention**:

* 1. Audiometric test records will be retained for the duration of the affected workers employment.
  2. Noise Exposure monitoring records are required to be kept two (2) years.
  3. All records will be provided to employee upon their request.

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revised on:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Hearing Conservation Training Record

Training Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Trainer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Topics covered (check below) (or attached copy of training materials):

\_\_\_ the effects of noise on hearing

\_\_\_ information on hearing protectors and their use,

\_\_\_ information on audiometric testing and its purpose

\_\_\_ the employees right to access to records

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# Noise Exposure Measurements

Monitoring Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Location** | **Operation** | **Noise Exposure Level**  **A-weighted dbA** |
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# Hearing Conservation Program Evaluation Checklist

### Training and Education

Failures or deficiencies in hearing conservation programs (hearing loss prevention programs) can often be traced to inadequacies in the training and education of noise-exposed employees and those who conduct elements of the program.

1. Has training been conducted at least once a year?
2. Was the training provided by a qualified instructor?
3. Was the success of each training program evaluated?
4. Is the content revised periodically?
5. Are managers and supervisors directly involved?
6. Are posters, regulations, handouts, and employee newsletters used as supplements?
7. Are personal counseling sessions conducted for employees having problems with hearing protection devices or showing hearing threshold shifts?

### Supervisor Involvement

Data indicate that employees who refuse to wear hearing protectors or who fail to show up for hearing tests frequently work for supervisors who are not totally committed to the hearing loss prevention programs.

1. Have supervisors been provided with the knowledge required to supervise the use and care of hearing protectors by subordinates?
2. Do supervisors wear hearing protectors in appropriate areas?
3. Have supervisors been counseled when employees resist wearing protectors or fail to show up for hearing tests?
4. Are disciplinary actions enforced when employees repeatedly refuse to wear hearing protectors?

### Noise Measurement

For noise measurements to be useful, they need to be related to noise exposure risks or the prioritization of noise control efforts, rather than merely filed away. In addition, the results need to be communicated to the appropriate personnel, especially when follow-up actions are required.

1. Were the essential/critical noise studies performed?
2. Was the purpose of each noise study clearly stated? Have noise-exposed employees been notified of their exposures and appraised of auditory risks?
3. Are the results routinely transmitted to supervisors and other key individuals?
4. Are results entered into health/medical records of noise exposed employees?
5. Are results entered in shop folders?
6. If noise maps exist, are they used by the proper staff?
7. Are noise measurement results considered when contemplating procurement of new equipment? Modifying the facility? Relocating employees? Have there been changes in areas, equipment, or processes that have altered noise exposure? Have follow-up noise measurements been conducted?
8. Are appropriate steps taken to include (or exclude) employees in the hearing loss prevention programs whose exposures have changed significantly?

### Engineering and Administrative Controls

Controlling noise by engineering and administrative methods is often the most effective means of reducing or eliminating the hazard. In some cases, engineering controls will remove requirements for other components of the program, such as audiometric testing and the use of hearing protectors.

1. Have noise control needs been prioritized?
2. Has the cost-effectiveness of various options been addressed?
3. Are employees and supervisors appraised of plans for noise control measures? Are they consulted on various approaches?
4. Will in-house resources or outside consultants perform the work?
5. Have employees and supervisors been counseled on the operation and maintenance of noise control devices?
6. Are noise control projects monitored to ensure timely completion?
7. Has the full potential for administrative controls been evaluated? Are noisy processes conducted during shifts with fewer employees? Do employees have sound-treated lunch or break areas?

### Monitoring Audiometry and Recordkeeping

The skills of audiometric technicians, the status of the audiometer, and the quality of audiometric test records are crucial to hearing loss prevention program success. Useful information may be ascertained from the audiometric records as well as from those who administer the tests.

1. Has the audiometric technician been adequately trained, certified, and recertified as necessary?
2. Do on-the-job observations of the technicians indicate that they perform a thorough and valid audiometric test, instruct and consult the employee effectively, and keep appropriate records?
3. Are records complete?
4. Are follow-up actions documented?
5. Are hearing threshold levels reasonably consistent from test to test? If not, are the reasons for inconsistencies investigated promptly?
6. Are the annual test results compared to baseline to identify the presence of an OSHA standard threshold shift?
7. Is the annual incidence of standard threshold shift greater than a few percent? If so, are problem areas pinpointed and remedial steps taken?
8. Are audiometric trends (deteriorations) being identified, both in individuals and in groups of employees? (NIOSH recommends no more than 5% of workers showing 15 dB Significant Threshold Shift, same ear, same frequency.)
9. Do records show that appropriate audiometer calibration procedures have been followed?
10. Is there documentation showing that the background sound levels in the audiometer room were low enough to permit valid testing?
11. Are the results of audiometric tests being communicated to supervisors and managers as well as to employees?
12. Has corrective action been taken if the rate of no-shows for audiometric test appointments is more than about 5%?
13. Are employees incurring STS notified in writing within at least 21 days? (NIOSH recommends immediate notification if retest shows 15 dB Significant Threshold Shift, same ear, same frequency.)

### Referrals

Referrals to outside sources for consultation or treatment are sometimes in order, but they can be an expensive element of the hearing loss prevention program and should not be undertaken unnecessarily.

1. Are referral procedures clearly specified?
2. Have letters of agreement between the company and consulting physicians or audiologists been executed?
3. Have mechanisms been established to ensure that employees needing evaluation or treatment receive the service (i.e., transportation, scheduling, reminders)?
4. Are records properly transmitted to the physician or audiologist, and back to the company?
5. If medical treatment is recommended, does the employee understand the condition requiring treatment, the recommendation, and methods of obtaining such treatment?
6. Are employees being referred unnecessarily?

### Hearing Protection Devices

When noise control measures are infeasible, or until such time as they are installed, hearing protection devices are the only way to prevent hazardous levels of noise from damaging the inner ear. Making sure that these devices are worn effectively requires continuous attention on the part of supervisors and program implementors as well as noise-exposed employees.

1. Have hearing protectors been made available to all employees whose daily average noise exposures are 85 dBA or above? (NIOSH recommends requiring HPD use if noises equal or exceed 85 dBA regardless of exposure time.)
2. Are employees given the opportunity to select from a variety of appropriate protectors?
3. Are employees fitted carefully with special attention to comfort?
4. Are employees thoroughly trained, not only initially but at least once a year?
5. Are the protectors checked regularly for wear or defects, and replaced immediately if necessary?
6. If employees use disposable hearing protectors, are replacements readily available?
7. Do employees understand the appropriate hygiene requirements?
8. Have any employees developed ear infections or irritations associated with the use of hearing protectors? Are there any employees who are unable to wear these devices because of medical conditions? Have these conditions been treated promptly and successfully?
9. Have alternative types of hearing protectors been considered when problems with current devices are experienced?
10. Do employees who incur noise-induced hearing loss receive intensive counseling?
11. Are those who fit and supervise the wearing of hearing protectors competent to deal with the many problems that can occur?
12. Do workers complain that protectors interfere with their ability to do their jobs? Do they interfere with spoken instructions or warning signals? Are these complaints followed promptly with counseling, noise control, or other measures?
13. Are employees encouraged to take their hearing protectors home if they engage in noisy non-occupational activities?
14. Are new types of or potentially more effective protectors considered as they become available?
15. Is the effectiveness of the hearing protector program evaluated regularly?
16. Have at-the-ear protection levels been evaluated to ensure that either over or under protection has been adequately balanced according to the anticipated ambient noise levels?
17. Is each hearing protector user required to demonstrate that he or she understands how to use and care for the protector? The results documented?

### Administrative

Keeping organized and current on administrative matters will help the program run smoothly.

1. Have there been any changes in federal or state regulations? Have hearing loss prevention program’s policies been modified to reflect these changes?
2. Are copies of company policies and guidelines regarding the hearing loss prevention program available in the offices that support the various program elements? Are those who implement the program elements aware of these policies? Do they comply?
3. Are necessary materials and supplies being ordered with a minimum of delay?
4. Are procurement officers overriding the hearing loss prevention program implementor's requests for specific hearing protectors or other hearing loss prevention equipment? If so, have corrective steps been taken?
5. Is the performance of key personnel evaluated periodically? If such performance is found to be less than acceptable, are steps taken to correct the situation?
6. Safety: Has the failure to hear warning shouts or alarms been tied to any accidents or injuries? If so, have remedial steps been taken?

# Common Noise Levels in Construction

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| --- | --- | --- | --- | --- |
| Normal Conversation | 55-65 |  | Gas Compactor | 90-95 |
| Ringing Telephone | 75-85 | Portable Drill | 88-96 |
| Belt Sander | 90-95 | Paint Sprayer | 95-105 |
| Man Lift | 84-101 | Bull Dozer | 90-103 |
| Hammer | 85-95 | Crane | 82-102 |
| Concrete Saw | 98-102 | Skill Saw | 88-102 |
| Back Hoe | 85-102 | Air Compressor | 90-98 |
| Portable Welder | 84-96 | Jack Hammer | 102-111 |
| Pneumatic Chipper | 103-113 | Air Gun | 108-112 |