

# [WHITWORTH TOOL]

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## Hearing Conservation Program

### **Administration**

It is the policy of WHITWORTH TOOL to institute an occupational hearing conservation program for our workers to prevent any temporary or permanent noise-induced hearing loss to employees, and to comply with the federal OSHA standard found at 29 CFR 1910.95 and 1926.52.

This written hearing conservation plan serves as a record of the details of the hearing conservation program in place at this company. We have this program in place to protect the hearing of all workers in the company. Elements of the hearing conservation program include:

- Monitoring,
- Audiometric testing program,
- Hearing Protection,
- Training and Information, and
- Recordkeeping.

EHS Coordinator has overall responsibility for coordinating safety and health programs in this company. He/She is the person having overall responsibility for the Hearing Conservation Program. Safety Manager will review and update the program, as necessary.

Copies of the written program may be obtained from the EHS Coordinator's office.

### **Monitoring**

The monitoring program is in place to provide an ongoing means of determining employee exposure to noise and protect employees based on excessive exposure. When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the company develops and implements an appropriate monitoring program to identify all employees for inclusion in the hearing conservation program and to select proper hearing protection.

Area noise monitoring will be conducted by the EHS Coordinator using a sound level meter to determine the need for personnel monitoring or engineering controls. If any work areas register levels of 85 dB(A) or greater, personnel monitoring will be conducted. Personnel monitoring is accomplished by using noise dosimeters which are worn by employees for their full work shift. The cumulative noise dose for the employee is then read at the end of their work shift.

The company provides an opportunity for affected employees or their representatives to observe any noise measurements conducted by informing the respective parties of when and where measurements will be taken. They will also be provided the opportunity to review the measurement results as soon as they become available.

### *Identification of Hazardous Noise Areas*

The EHS Coordinator will identify work areas within Company facilities where noise levels equal or exceed 85 dBA. Records shall be maintained by the EHS Coordinator and updated at least every two years to determine if any alteration in noise levels has occurred. Those areas where the noise levels are below 85 dBA will not be routinely monitored. Identification of hazardous noise areas and equipment and any subsequent noise monitoring will be conducted by the EHS Coordinator.

Signs will be posted at the entrance to any work area where noise levels exceed 85 dBA, requiring anyone entering the area to wear proper hearing protection. Personnel who work in these areas shall have hearing protection supplied to them, shall be instructed in its proper use, and be required to wear this equipment when in these identified areas. It is the responsibility of the area supervisor to ensure that these precautions are maintained.

Equipment which produces noise levels greater than 85 dBA, or 115 dB peak sound pressure levels shall also be appropriately labeled.

### *Noise Measurements and Exposure Assessments*

In order to effectively control noise it is necessary that the noise be accurately measured according to standard procedures and that the measurements be properly evaluated against accepted criteria. All noise

monitoring will be conducted in accordance with established standard operating procedures.

The monitoring of employees for noise exposure is made up of two parts, area and personal monitoring. Area measurements are generally obtained first. If noise levels are at or above 85 dBA, personal monitoring using dosimeters is then performed. Sample data sheets will be used to record monitoring data for both area and personal noise monitoring results.

### *Area Measurements*

In an area survey, measurements of environmental noise levels are recorded using a sound level meter to identify work areas where employees' exposures may be above hazardous levels, and where more thorough exposure monitoring may be needed. Area monitoring is conducted using a calibrated sound level meter set to the A scale, slow response. Within the area of interest, several different locations will be measured. Typical measurement locations would include:

- In the hearing zone at the employee's normal work location.
- Next to the noise source(s).
- At the entrance(s) to the work area.
- At other locations within the area where the employee might spend time working.

A rough sketch of the area will be included with the results showing the locations where the noise readings were obtained.

If the noise levels are below 85 dBA on a time-weighted average basis in the area, no further routine monitoring will be required for that area. Should any of the noise measurements equal or exceed 85 dBA, records shall be maintained as to the noise levels recorded, where they were taken, and the source(s) of the noise. These records shall be updated at least once every two years to determine if any changes have occurred that would warrant remonitoring of exposed personnel. If any of the measurements equal or exceed a noise level of 85 dBA, employees who work in or near the high noise area or equipment shall have their noise exposure determined through personnel monitoring using dosimeters.

### *Personnel Monitoring*

Determination of the noise exposure level will be accomplished using calibrated noise dosimeters. Each employee to be monitored will have a dosimeter placed on him/her at the beginning of his/her normal work shift with the microphone placed in the “hearing zone”. The dosimeter will be worn for the full duration of the work shift while the employee performs his/her normal work routine. At the end of the work shift, the dosimeter will be removed and information printed out as soon as possible. Background information will be collected from each employee detailing job description, unusual job activities, etc., for the time period sampled. Those employees whose noise exposure equals or exceeds 85 dBA on an 8-hour TWA (Time-Weighted Average) will be referred to the Safety Manager for inclusion in the Hearing Conservation Medical Surveillance Program.

### *Remonitoring of Hazardous Noise Areas*

All areas where noise levels equal or exceed 85 dBA shall be remonitored at least every two years. Employees who work for extended periods of time (>2 hours) in the high noise areas and where their 8-hour TWA (Time-Weighted Average) equals or exceeds 85 dBA will be monitored every year to determine their personal noise exposure.

Whenever an employee exhibits a standard threshold shift, as determined by the Safety Manager, the employee’s work place shall be remonitored to identify and ameliorate the cause.

### *Remonitoring Due to Changes*

Any area with noise levels that equal or exceed 85 dBA shall also be remonitored whenever a change in production process, equipment, or controls increase the noise exposure such that additional employees are exposed to noise levels at or above 85 dBA on a time-weighted average basis. Areas where the noise levels have dropped below 80 dBA due to alterations in equipment, controls or process changes shall be eliminated from the monitoring program.

The company notifies all employees exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring by the posting a copy of the results on the employee bulletin board.

## **Engineering and Administrative Controls**

### *Engineering Controls*

As in dealing with any workplace hazard, the primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source or along the transmission path that reduces the noise level at the employee's ear

### *Administrative Controls*

Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible.

The use of engineering and administrative controls should reduce noise exposure to the point where the hazard to hearing is eliminated or at least more manageable.

## **Personal Protective Equipment**

The company makes 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.

The company ensures that employees have a variety of suitable protectors that attenuate (lower) employee exposure at least to an 8-hour time-weighted average 85 decibels or lower for employees who have experienced a standard threshold shift in their hearing.

The company has the following varieties of suitable hearing protection for employees to choose from:

- Insert Type Earplugs: a device designed to provide an air-tight seal with the ear canal. There are three types of insert earplugs – premolded, formable, and custom earplugs.
1. Premolded Earplugs: pliable devices of fixed proportions. Two standard styles, single flange and triple flange, come in various sizes, and will fit most people. Personnel responsible for fitting and dispensing earplugs will train users on proper insertion, wear, and care. While premolded earplugs are reusable, they may deteriorate and should be replaced periodically.
  2. Formable Earplugs: come in just one size. Some are made of material which, after being compressed and inserted, expands to form a seal in the ear canal. When properly inserted, they provide noise attenuation values that are similar to those from correctly fitted premolded earplugs. Individual units may procure approved formable earplugs. Supervisors must instruct users in the proper use of these earplugs as part of the annual education program.

Each earplug must be held in place while it expands enough to remain firmly seated. A set of earplugs with a cord attached is available. These earplugs may be washed and therefore are reusable, but will have to be replaced after two or three weeks or when they no longer form an airtight seal when properly inserted.

3. Custom Molded Earplugs: a small percentage of the population cannot be fitted with standard premolded or formable earplugs. Custom earplugs can be made to fit the exact size and shape of the individual's ear canal. Individuals needing custom earplugs will be referred to an audiologist.
- Earmuffs: devices worn around the ear to reduce the level of noise that reaches the ear. Their effectiveness depends on an air tight seal between the cushion and the head.

### *Selection of Hearing Protective Devices*

Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the EHS Coordinator's office. In

all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 85 dBA or lower.

### *Issuance of Hearing Protective Devices*

The issuance of hearing protective devices is handled through the EHS Coordinator. The EHS Coordinator will issue and fit the initial hearing protective devices (foam inserts, disposables). Instruction on the proper use and care of earplugs and earmuffs will be provided whenever HPDs (hearing protective devices) are dispensed. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The EHS Coordinator will dispense ear muffs when necessary and will maintain a supply of disposable earplugs.

### *Use of Hearing Protective Devices*

1. Always use and maintain HPDs as originally intended and in accordance with instructions provided.
2. Earmuff performance may be degraded by anything that compromises the cushion-to-circumaural flesh seal. This includes other pieces of personal protective equipment such as eyewear, masks, faceshields, and helmets.

### *Maintenance of Hearing Protective Devices*

- Reusable earplugs, such as the triple flange or formable devices should be washed in lukewarm water using hand soap, rinsed in clean water, and dried thoroughly before use. Wet or damp earplugs should not be placed in their containers. Cleaning should be done as needed.
- Earmuff cushions should be kept clean. The plastic or foam cushions may be cleaned in the same way as earplugs, but the inside of the muff should not get wet. When not in use, ear muffs should be placed in open air to allow moisture that may have been absorbed into the cups to evaporate.

### *Hearing Protection Performance Information*

The maximum of sound attenuation one gets when wearing hearing protection devices is limited by human body and bone conduction

mechanisms. Even though a particular device may provide outstanding values of noise attenuation the actual noise reductions may be less because of the noise surrounding the head and body bypasses the hearing protector and is transmitted through tissue and bone pathways to the inner ear.

The term “double hearing protection” is misleading. The attenuation provided from any combination earplug and earmuff is not equal to the sum of their individual attenuation values.

The company ensures evaluation for adequacy of the hearing protection attenuation for the specific noise environments in which the protector will be used, according to specifications given in an appendix to the standard.

The company reevaluates attenuation whenever employee noise exposures increase to the extent that current hearing protectors no longer provide adequate attenuation, and then provides more effective hearing protection.

### **Audiometric Testing Program**

The audiometric testing program is in place and available at no cost to all affected employees to ensure that noise exposures are kept at proper levels.

The program ensures that a valid baseline audiogram is established for exposed employees within 6 months of their first exposure (or within one year if mobile vans are used, with employees wearing hearing protection for any period exceeding six months).

Audiometric testing is repeated annually.

#### *Evaluation of Audiogram*

1. Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift as defined in paragraph (g)(10) of this section has occurred. This comparison may be done by a technician.

2. If the annual audiogram shows that an employee has suffered a standard threshold shift, the company may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.
3. The audiologist, otolaryngologist, or physician shall review problem audiograms and shall determine whether there is a need for further evaluation. The Company shall provide to the person performing this evaluation the following information:
  - a. A copy of the requirements for hearing conservation as set forth in paragraphs (c) through (n) of this section;
  - b. The baseline audiogram and most recent audiogram of the employee to be evaluated;
  - c. Measurements of background sound pressure levels in the audiometric test room as required in Appendix D: Audiometric Test Rooms.
  - d. Records of audiometer calibrations required by paragraph (h)(5) of this section.

### *Standard Threshold Shift*

As used in this section, a standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: Calculation and Application of Age Correction to Audiograms.

If standard threshold shift has occurred, the company does the following:

### Follow-Up Procedures

1. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined in paragraph (g)(10) of this section has occurred, the employee shall be informed of this fact in writing, within 21 days of the determination.
2. Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the Company shall ensure that the following steps are taken when a standard threshold shift occurs:
  - a. Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.
  - b. Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
  - c. The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the Company suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
  - d. The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.
3. If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the Company:
  - a. Shall inform the employee of the new audiometric interpretation; and
  - b. May discontinue the required use of hearing protectors for that employee.

## **Training and Information**

[WHITWORTH TOOL] has a hearing protection training program for all employees exposed to noise at or above an 8-hour time-weighted average of 85 decibels.

The company makes copies of the standard available to affected employees or their representatives by posting a copy of the standard in the following affected work areas.

The company repeats the training program annually. The company assures that the training material is updated to be consistent with changes in the protective equipment and work processes.

The company assures that each affected employee is informed of at least the following information:

- The effects of noise on hearing;
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and
- The purpose of audiometric testing, and an explanation of test procedures.

The company makes informational materials pertaining to the Occupational Noise Exposure standard that are supplied to it by OSHA available to affected employees or their representatives by posting materials on bulletin boards, providing information verbally or in writing during employee training and by making them available in the EHS Coordinator's office.

## **Recordkeeping**

Recordkeeping is an essential element of the hearing conservation program, since it is the means by which hearing levels are tracked and assessed over a period of

years. The company has in place a series of measures to maintain comprehensive and up-to-date records.

The company maintains accurate records of all employee exposure measurements required by the monitoring program of this regulation.

The company maintains accurate records of all employee audiometric test records obtained pursuant to paragraph (g) of 1910.95.

The company retains noise exposure measurement records for two years and audiometric test records for the duration of the affected employee's employment plus 30 years.

The company provides access to records to employees, former employees, representatives designated by the individual employee, and OSHA, upon request.

### **Program Evaluation**

Periodic program evaluations will be conducted to assess compliance with federal and state regulations and Company Program requirements. Both the monitoring and audiometric testing portions of the Company Hearing Conservation Program will be reviewed annually to assure its quality and effectiveness.

An evaluation of the Program, including wearer acceptance, appraisal of protection afforded, and field audits of hearing protection use and record keeping will be conducted at least annually. Items to be considered include:

- Standard operating procedures.
- Training records and course content for supervisors and employees.
- Maintenance of HPDs (hearing protection devices).
- Field audits of HPD use.
- Review of recorded threshold shifts on OSHA log.

The findings of the Company Hearing Conservation Program evaluation will be documented, and this documentation will list plans to correct faults in the program and set target dates for the implementation of the plans.