



## **HEARING CONSERVATION PROGRAM (HCP)**

### **PURPOSE**

The hearing conservation program is intended to protect Superior Greenstone District School Board employees from noise-induced hearing loss and allow the Board to take early preventative and control measures.

### **INTRODUCTION**

Excessive sound levels can result in permanent hearing loss, create physical and psychological stress and interfere with communication. Noise induced hearing loss is permanent and develops from months or years of excessive exposure. The hearing loss depends on how loud the noise is and the duration of the exposure.

### **COMPONENTS**

This hearing conservation program includes provisions for:

- Sound level Monitoring
- Audiometric Testing
- Employee Training
- Record keeping
- Controls
- Hearing Protection Devices
- Home, Community, and Recreational Noise

### **SCOPE**

This program applies to Superior Greenstone District School Board employees that are potentially exposed to excessive noise levels.

### **Legislation and Standards**

Noise exposure standards are established by the Ontario Ministry of Labour and are given in Regulation 851, Industrial Establishments, Section 139 made under the Occupational Health and Safety Act. Regulation 851 was amended by Regulation 565/06.

The regulation requires that every employer take all measures reasonably necessary in the circumstances to protect workers from exposure to hazardous sound levels. Engineering controls should be considered first before implementing a personal protective equipment program.

## **Hazard Assessment**

If there is a concern raised that a worker may be exposed to noise at a work location in excess of the limits prescribed in the HCP, then the supervisor/principal/site administrator must perform a noise assessment survey.

Before requesting a noise assessment survey, the supervisor/principal/site administrator should conduct a walk-through survey of the area of concern with the affected employee(s) to help make a decision of whether or not an assessment is required.

Some indicators of potentially hazardous noise levels include:

- noise is louder than busy city traffic,
- people have to raise their voice to talk to someone at one metre (3 feet) away
- at the end of work day people have to increase the volume of their radio or TV substantially-too loud for others
- after working for a few years at that workplace, employees find it difficult to communicate in a crowd where there are other sounds or many voices

**A noise hazard assessment will be conducted in two phases:**

### **Phase 1**

The Phase 1 noise assessment survey is to determine if:

- a noise problem exists
- further measurements are needed

A noise assessment survey takes noise measurements throughout a work area or section to identify noisy areas. If all the measured noise levels are below 80dbA then no further assessment/action will be taken. If an average noise level of 80dbA's exists then phase two testing (personal dosimetry) will be conducted to determine an employee's average exposure. Note: 80dbA's is 5 db's lower than the current legislative time weighted average for an 8 hour exposure.

### **Phase 2**

The second step of the assessment process is to determine an employee's personal noise exposure level; that is, the amounts of noise to which individual employee(s) are exposed.

Note: If the workplace noise remains steady/constant, noise assessment survey data can be used to determine an employee's exposure. (Assuming the employee only works in that area all day)  
Personal noise dosimetry will always be conducted if the workplace noise levels vary throughout the day or if the workers are fairly mobile.

All Phase 1 and 2 results will be provided to the affected employee(s), the supervisor/principal/site administrator and the Superior Greenstone District School Board Disability Wellness Officer.

## **Noise Assessment Surveys**

Noise assessment surveys with a sound level meter will be performed by utilizing a designed strategy to:

- Determine the level of noise within a given (defined) area where an employee works
- Determine if hearing protection is required (if applicable)
- Evaluate if noise controls currently in place are working adequately
- Determine if warning signs are required.

Spot measurements will be collected in select locations within the area of employee concern. All continuous, intermitted and impulse noise shall be considered as part of the survey.

## **Survey Reassessment**

Reassessment may be required when changes in processes, equipment and or controls have been implemented in areas. Supervisor/principal/site administrator shall be responsible for requesting reassessments through the Plant Department.

## **Personal Noise Dosimetry Measurement**

When it has been determined that a noise problem or potential noise problems exists then personal noise dosimetry will be performed by Superior Greenstone District School Board Plant Department Health and Safety staff or their designate. All continuous, intermitted and impulse noise shall be considered as part of the measurement.

The goal of personal noise dosimetry is to:

- Measure a workers exposure (dose) therefore excluding them or including them in the HCP
- Determine the require amount of hearing protection (if exposed)
- Verify if current controls are adequate

Workers exposed at or above levels defined in Appendix A will be included in the boards' audiometric testing program.

## **Sound Level Monitoring**

The Superior Greenstone District School Board Plant Department arranges for sound level monitoring when ordered by the Ministry of Labour to determine if hazardous noise levels exist. Additionally, any request from schools for noise monitoring should be placed with the Superior Greenstone District School Board Plant Department. Sound level monitoring shall be done by performing noise surveys and/or dosimetry and by following accepted sampling methods as described in the CSA Standard Z107.56-06.

## **Audiometric Testing**

All audiometric tests, hearing protection and equipment calibration shall be performed in accordance with the criteria established by CSA Standards.

## **Training**

All employees to whom this program applies will receive information and training in:

- A. the effects of noise on hearing
- B. use and maintenance of hearing protection
- C. their roles and responsibilities under this Hearing Conservation Program (HCP)

Additionally, Superior Greenstone District School Board Plant Department may conduct training in the form of a group presentation, by handouts, video or online computer based training on the hearing protection program and/or its components.

## **Noise Controls:**

Controls are measures taken to reduce a worker's exposure to noise and/or to reduce noise levels.

## **Engineering Controls:**

Engineering controls are the measure of first choice for noise reduction. If practical, noise levels should be reduced by these control methods. Some examples of engineering controls are:

- noise source enclosure or enclosure of receiver
- substitution with less noisy equipment
- maintenance of equipment and machines
- acoustical treatment of walls, floors and ceilings

## **Administrative Controls**

Administrative controls are administrative changes in the work schedule or process so that an employee's exposure and duration of noise exposure is reduced.

Examples of administrative controls are:

- changing a job schedule
- selecting/specifying lower noise sources during purchasing
- producing procedures to control noise hazards
- posting of warning signs

## **Hearing Protection Devices**

The preferred methods for reducing noise exposure are engineering and administrative controls. However, where the noise exposures may exceed the permissible dose, then hearing protection must be worn.

The hearing protection device provided shall comply with CSA Standard Z94.2. The hearing protector acts as a barrier and reduces the amount of sound transmitted to the ear.

Hearing protection devices shall be made available to all employees.

Supervisor/principal/site administrator will provide hearing protection devices for all staff and students.

## **Types of Hearing Protection**

- Ear plugs are inserted to block the ear canal. They may be premolded (preformed) or mouldable (foam Ear plugs). Ear plugs are sold as disposable products or reusable plugs. Custom molded ear plugs are also available.
- Semi-insert ear plugs which consist of two ear plugs held over the ends of the ear canal by a rigid headband.
- Ear muffs consist of sound-attenuating material and soft ear cushions that fit around the ear and hard outer cups. They are held together by a head band.

## **Home, Community, and Recreational Noise**

Exposure to damaging noise does not come only from the workplace. If you use stereo headsets, operate power tools for yard work, have a long daily commute in heavy traffic, or use a number of household appliances, you still may be exposed to potentially damaging noise.

Recreational activities such as hunting, target shooting, motor boating, waterskiing, jet skiing, snowmobiling, motorcycle riding, woodworking, rock music, or stereo headsets are sources of hazardous noise. So are some movie theaters, home entertainment centers, car stereo systems, health clubs, dance clubs, bars, and amusement centers.

Just in our day-to-day living activities we can also be exposed to damaging noise when we use lawnmowers, hairdryers, blenders, power saws, weed-wackers, leaf blowers, food choppers/processors, and other convenience appliances.

Children's toys can also be hazardous, e.g., toys with horns and sirens, toy vacuum cleaners and vehicles, musical instruments, talking dolls, squeeze toys, and battery operated toys that emit sounds.

Dealing with noise and its effects is a personal responsibility, a work-place responsibility, and a community responsibility. The first and obvious rule is avoiding loud noise whenever possible. A good rule of thumb is to remember that if you must shout to be heard, then you should be avoiding the situation or using ear protection.

## **WARNING SIGNS**

A clearly visible warning sign shall be posted at every approach to an area in the workplace where the sound level regularly exceeds 85 dBA.



## **RESPONSIBILITIES**

### Employee:

- to report noise related concerns to their Supervisor/Principal/Site Administrator as outlined by the Superior Greenstone District School Board Internal Responsibility System
- to participate in the Hearing Conservation Program (HCP)
- to wear hearing protection where required
- to participate in training

### Supervisor/Principal/Site Administrator:

- to provide instruction to staff relating to noise issues
- to implement any recommended controls within their means
- to follow-up on employee concerns
- to enforce the use of personal protective equipment
- to enforce signage
- to provide/make available hearing protectors, as deemed appropriate and necessary to all education staff and students

### The Superior Greenstone District School Board Plant Department:

- to provide advice relating to audiometric testing concerns or hearing protective equipment when ordered by Ministry of Labour
- to assist where required with the training component and/or provide training materials
- to monitor information on legislation
- to monitor, audit, update and continuously improve the program and the hearing conservation practices in the schools/sites
- to communicate the hearing conservation program to employees, supervisors and site administrators
- to provide/make available hearing protectors, as deemed appropriate and necessary to all plant and board staff

### Health Promotion and Wellness Administrator:

- to maintain and monitor staff audiograms if required and report changes to the Health and Safety Department

### The Board:

- to establish and approve the Hearing Conservation Program (HCP) under the Board's Health and Safety policy 706
- to fulfill their responsibilities as an employer under the Occupational Health and Safety Act
- to provide resources to support the mandate of the Hearing Conservation Program (HCP)

### Board Wide Joint Health and Safety Committee:

- to promote hearing conservation objectives and procedures

## DEFINITIONS

**Decibel:** The unit of sound measurement is the decibel. The scale of sound intensity (the loudness of a noise) is logarithmic, not linear.

**dBA:** means a measure of sound level in decibels using a reference sound pressure of 20 micro pascals when measured on the A weighting network of a sound level meter

Lex8: is the equivalent sound exposure level in 8 hours

**CSA:** Canadian Standards Association. The CSA is a not for profit member based association serving business, industry, government and consumers in Canada and the global market place. The CSA develops standards that address real needs such as public safety and health.

**Equivalent sound Exposure Level:** is the steady sound level in dBA which if present in a workplace for 8 hours in a day would contain the same total energy as that generated by the actual and varying sound levels to which a worker is exposed in his or her total work day determined in accordance with the formula set out in subsection 2 of the regulation, O. Regulation 565/06.

## REFERENCES

Occupational Health and Safety Act and Regulations for Industrial Establishments, R.R.O. 1990, Reg. 851 Section 130 and 139.

Canadian Standards Association (CSA) Standard Z94.2-02 (2007), "Hearing Protectors".

Canadian Standards Association (CSA) Standard Z107.56-06, "Procedures for the Measurement of Occupational Noise Exposure".

American National Standards Institute (ANSI) Standard S1.4-1983 (R2006) with amendment S1.4a-1985 (R2006) Specification for Sound Level Meters

## Appendix A

| Table of Equivalent Noise Exposures |              |
|-------------------------------------|--------------|
| Steady Sound Level dBA              | Duration     |
| 82                                  | 16 hours     |
| 85                                  | 8 hours      |
| 88                                  | 4 hours      |
| 91                                  | 2 hours      |
| 94                                  | 1 hour       |
| 97                                  | 30 minutes   |
| 100                                 | 15 minutes   |
| 103                                 | 7.5 minutes  |
| 106                                 | 3.75 minutes |
| 109                                 | 1.88 minutes |

