



HEARING LOSS PREVENTION PROGRAM

Responsibility: Manager of Health, Safety & Security

Legal References: *Occupational Health & Safety Act*
CSA Group Z107.56-18 Measurement of Noise Exposure
CSA Group Z94.2-14 Hearing Protection Devices – Performance, Selection, Care and Use
CSA Group Z1007:16 (R2020) Hearing Loss Prevention Program (HLPP) Management

Related References:

Revisions:

Reviewed:

1. Objective

1.1 The Waterloo Region District School Board (WRDSB) is committed to the protection of all employees against the hazards of occupational noise exposure and to the safeguarding of an individual's hearing while at work. The intent of the Hearing Loss Prevention Program (HLPP) is to set minimum standards for the protection of employees from occupational noise-induced hearing loss.

2. Scope and Limitations

2.1 This program is applicable to all WRDSB employees who have the potential to be exposed to noise levels that could lead to noise induced hearing loss. Health, Safety & Security have identified a list of positions that the HLPP applies to (Appendix A).

2.2 Any deviation from this program must be approved by the Manager of Health, Safety & Security.

3. Definitions

3.1 **A-weighted Decibels (dBA)** - a type of decibel measurement, which closely represents the manner in which a human ear responds to noise. The decibel is a logarithmic and dimensionless unit for measuring sound pressure levels. The acceptable Occupational Noise Exposure level is set at 85 dBA or under.

3.2 **Audiometric Tests** - air-conduction hearing tests in which workers respond to pure-tones in order to determine their hearing threshold levels.

3.3 **Daily Exposure Level or Lex,8** - the sound exposure of an employee, averaged over an 8 hour shift.

- 3.4 **Dosimeter** - an instrument designed to be worn during all or part of the day as a personal monitor, in order to measure the wearer's noise exposure. The use of this equipment will be determined by Health, Safety & Security.
- 3.5 **Hearing Protection** - devices that, when worn properly, reduce a person's noise exposure level and risk of hearing loss. Examples of hearing protection include earplugs and earmuffs.
- 3.6 **Noise** - noise can be defined as any unwanted sound. Noise levels and noise exposure of concern to WRDSB are those associated with noise induced hearing loss. Refer to the definitions for "noise-exposed" and "noise hazard area" for clarification. 'Noise' and the degree of annoyance/nuisance attributed to noise can be subjective to each individual, however, for the purposes of this program, noise will be quantified in A-weighted decibels (dBA).
- 3.7 **Noise Dosimetry** - this noise assessment technique measures an employee's personal noise exposure and is particularly useful and applicable when employees work in numerous noisy areas for short durations at a time or perform different noisy operations on any given day.
- 3.8 **Noise-Exposed** - For the purpose of this program, a person is considered noise-exposed if his/her exposure exceeds the occupational exposure limit established by the Ontario Ministry of Labour (i.e. currently 85 dBA, over an 8 hour shift).
- 3.9 **Noise Hazard Area** - An area is considered a noise hazard area if the sound levels regularly exceed 85 dBA.
- 3.10 **Noise Reduction Rating (NRR)** - is a unit of measurement used to determine the effectiveness of hearing protection devices to decrease sound exposure within a given working environment. The higher the NRR number associated with a hearing protector, the greater the potential for noise reduction.
- 3.11 **Occupational Exposure Limit (OEL) or Criterion Level** - A health-based workplace standard to protect workers from adverse exposures. Please refer to the table in section 5.3.3 for noise level exposure and time limits.
- 3.12 **Time Weighted Average** - the sound exposure averaged over 8 hours.

4. Roles and Responsibilities

4.1 WRDSB

- 4.1.1 Ensure the HLPP is established and meets legislated requirements related to noise exposure to ensure a safe working environment.

4.2 Health, Safety & Security Department

- 4.2.1 Interpret and clarify noise control and hearing loss prevention requirements as set forth in the Occupational Health and Safety Act (OHSA), its Regulations, relevant standards and best practices, and determine how they apply to Board operations.

- 4.2.2 Review the HLPP as required, or at a minimum, every three years, and update when needed in consultation with Facility Services and the Joint Health and Safety Committee (JHSC).
- 4.2.3 Communicate with Administrators/Supervisors the process for identifying new staff in their areas who qualify for participation in the HLPP.
- 4.2.4 Ensure information, instruction and/or training is available, as necessary, for all employees participating in the HLPP.
- 4.2.5 Assist in identifying job positions that are included in the HLPP.
- 4.2.6 Recommend appropriate hearing protection and ensure its availability, as required.
- 4.2.7 Work with Facility Services and other Board stakeholders to evaluate and implement noise control measures (i.e., engineering controls, work practices, administrative controls or hearing protectors).
- 4.2.8 In conjunction with Facility Services, ensure the necessary resources are available to implement the HLPP including noise level assessments, engineering controls (where feasible), information, instruction and/or training and appropriate hearing protection.

4.3 Facility Services

- 4.3.1 Ensure signage is installed, as required, in areas where noise assessments have measured noise exposures exceeding 85 dBA.
- 4.3.2 Work with Health, Safety & Security to evaluate and implement noise control measures (i.e., engineering controls, work practices, administrative controls or hearing protectors).
- 4.3.3 Assist with the review and update of the HLPP.
- 4.3.4 Environmental Officer(s) conduct initial noise assessments, as required, and arrange for third party assessments when needed in consultation with Health, Safety & Security.
 - 4.3.4.1 Prior to conducting internal noise assessments, the Environmental Officer(s) must notify Health, Safety & Security, the school administrator(s), Facility Manager and Facility Supervisor for the site.
 - 4.3.4.2 For third party noise assessments, the JHSC co-chairs must also be notified of the date, time and location of testing as per the OHSA.

4.4 Administrator/Supervisor

- 4.4.1 Ensure compliance with the HLPP as it applies to their workplace and employees.
- 4.4.2 Identify and inquire about noise level testing of equipment and work areas if noise levels are suspected to be above 85 dBA for periods of time that may pose a hazard to workers (*see chart 5.3.3 for acceptable exposure limits*). (*As a guideline, if it is necessary for a person to speak very loudly to be heard by another person within 1 metre of distance, then the sound level is likely in excess of 85 dBA.*)
- 4.4.3 Identify to Health, Safety & Security any employees who may be required to participate in the HLPP (i.e., those who regularly work in environments or with equipment that have noise levels exceeding 85 dBA), if not already covered under the program (i.e., Appendix A)
- 4.4.4 If PPE is issued to a worker by the employer to protect against a hazard, in this case noise, it is required to be worn by the worker as instructed. Check and enforce that staff wear the hearing protection issued to them

while working in areas where a noise hazard exists. Consult with Health, Safety & Security if a concern arises. Consult with Human Resource Services regarding progressive discipline if non-compliance is a recurring issue with an employee.

4.5 WRDSB Employees

- 4.5.1 Follow the direction outlined in this procedure and directed by the Administrator/Supervisor as it applies to their position.
- 4.5.2 Participate in any HLPP information, instruction and/or training as required.
- 4.5.3 Report safety concerns regarding noise to your Administrator/Supervisor.
- 4.5.4 Use, clean and store supplied hearing protection provided by the Board in accordance with the manufacturer's instructions.
- 4.5.5 Use hearing protection provided by the Board for on-site work purposes only.
- 4.5.6 Do not use personal non-medical listening devices (i.e., headphones, earbuds) while performing work for which hearing protection is required.

4.6 Joint Health and Safety Committee (JHSC) and Workplace Inspection Team (WIT)

- 4.6.1 Where there is a piece of equipment or area that is observed to be, or thought to be, above the occupational exposure limit for noise, the WIT and/or JHSC Audit Team is encouraged to record this concern as part of their monthly workplace inspection report, and report the details of the concern directly to the Administrator/Supervisor.
- 4.6.2 The JHSC Co-Chairs will be invited to and may be present at the beginning of noise assessments conducted by a third party contracted by the Board.
- 4.6.3 The JHSC will be consulted with and invited to provide feedback on the HLPP and related reports as requested by Health, Safety & Security.

5. Noise Management and Hearing Loss Prevention Program

5.1 Criteria for Participation in the Hearing Loss Prevention Program

- 5.1.1 WRDSB employees who may be exposed to steady state or continuous noise levels above the time weighted average of 85 dBA as part of their job are required to wear hearing protection and to follow the prescribed measures in this procedure to help prevent noise-induced hearing loss. Appendix A identifies employee groups who are included within the HLPP based on noise assessment data from a third-party contractor.

5.2 Evaluating Worker Noise Exposures

- 5.2.1 Where there are known or suspected sources of high noise levels, the assessment shall be conducted in accordance with Canadian Standards Association (CSA) Standard Z197.56-18 *Measurement of Noise Exposure*.
- 5.2.2 Initial noise level assessments may be conducted by the Environmental Officer(s) or other Facility Services staff who have received proper training in conducting noise level assessments using the equipment specified in CSA Standard Z107.56-18 *Measurement of Noise Exposure*. A summary report will be provided to Health, Safety & Security.
- 5.2.3 Where outside expertise is required, the Board will contract the services of a third party specializing in noise assessments.

- 5.2.4 The Environmental Officer(s) will notify the JHSC Co-Chairs in advance of any third party noise assessments.
- 5.2.5 A written noise exposure report will be obtained from the third party. Health, Safety & Security will provide the results of noise assessments to the JHSC.
- 5.2.6 Equipment shall be calibrated before and after each survey or use according to the manufacturer's specifications.

5.3 Engineering and Administrative Noise Controls

- 5.3.1 If noise testing results show that facilities, building retrofits, equipment and work processes have been identified as noise hazard areas, Facility Services, in collaboration with Health, Safety & Security, will investigate appropriate engineering and administrative controls to reduce noise level exposures to workers.
- 5.3.2 Where engineering controls are deemed impractical or unreasonable to adopt, install or provide, administrative controls and/or personal protective equipment shall be implemented.
- 5.3.3 Administrative controls, such as limiting exposure time, may be used as appropriate to control exposure (e.g., with visitors, short inspection visits). The following table is from The Canadian Standards Association standard CSA Z1007:16 (R2020): Hearing loss prevention program management.

Table 1: Equivalent noise exposure levels resulting in $L_{eq,8} = 85$ dBA	
Noise levels (dBA)	Duration in a 24 hour period
82	16 hours
83	12 hours
84	10 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes

6. Personal Protective Equipment (PPE) – Hearing Protection

- 6.1 If a formal noise assessment confirms that workers are exposed to noise levels meeting or exceeding the levels and exposure durations as identified in Table 1, the Board will assess the need for and if deemed appropriate, provide workers with adequate hearing protectors for their position.
- 6.2 The Administrator/Supervisor is responsible for ensuring that workers wear the issued hearing protection when in the noise hazard area.
- 6.3 Employees are responsible for wearing the hearing protection and notifying their Administrator/Supervisor if their PPE is defective, faulty or requiring replacement.
- 6.4 Hearing protection provided by the Board is for an individual's use and is not to be shared. PPE must be used, cared for and stored by employees according to the manufacturer's instructions.

Table 2 has been modified from the CSA Standard:

Table 2: Summary of CSA Recommended Class/Grade of Hearing Protector	
Maximum Equivalent Noise Level (dBA)	Recommended Class/Grade of Hearing Protector
Lex, 8 less than or equal to 85 dBA	No protection required
Lex, 8 less than or equal to 90 dBA	Class C / Grade 1
Lex, 8 less than or equal to 95 dBA	Class B / Grade 2
Lex, 8 less than or equal to 100 dBA	Class A / Grade 3
Lex, 8 less than or equal to 105 dBA	Class A / Grade 4
Lex, 8 less than or equal to 110 dBA	Dual Protection: minimum of a Class B/Grade 2 earmuff, and a Class A/Grade 3 earplug
Lex, 8 greater than 110 dBA	Dual Protection: minimum of a Class B/Grade 2 earmuff, and a Class A/Grade 3 earplug. Also recommended: Limited exposure duration; octave band analysis for attenuation predictions; and twice-annual audiometry.
<i>Notes: The CSA Standard states that a hearing protector with an NRR of at least 24 generally meets Class A requirements, a protector offering an NRR of at least 17 generally meets Class B requirements and a protector assigned an NRR of less than 17 falls generally into Class C.</i>	

6.5 The Board may provide different types of hearing protectors as deemed appropriate by Health, Safety & Security, based on an employee's job duties, and required levels of protection. See Appendix B for fitting instructions for all types of hearing protectors.

6.6 Signage

6.6.1 Facility Services shall ensure that where equipment or a facility area has been identified as having noise levels that exceed 85 dBA, and engineering controls are not in existence or obtainable, reasonable or practical, clearly visible warning signs shall be posted at the entrances to all areas indicating in written and pictogram form, that hearing protection is required. See Appendix C for an example of noise hazard signage.

7. Information and Instruction

7.1 Information and instruction will be provided by Health, Safety & Security to existing employees upon implementation of this program and as required, and to new hires who are identified within the HLPP.

8. Procedure Review

8.1 Health, Safety & Security will review this procedure as required, or every three years at a minimum.

Appendix A - Criteria For Participation

Assessment data from a third-party contractor has identified the following groups of employees for inclusion in the Hearing Loss Prevention Program:

Employee Group	Occupational Noise Exposure	Hearing Protectors Provided by WRDSB	Replacement of Hearing Protectors
Senior Elementary and Secondary Music Teachers of Instrumental Music	Mandatory use of hearing protection is required for staff teaching instrumental music for 200 minutes or more, on a given day.	Class B or BL hearing protection with a musician's filter*.	Custom musician's earplugs for permanent employees and/or an acceptable alternative provided in interim or for long term occasional staff meeting the criteria.
Technological Education Teachers of Construction, Manufacturing or Transportation	Mandatory use of hearing protection is required for staff in tech shops where signage is posted indicating that hearing protection is required.	Class B or BL hearing protection *such as earmuffs, earplugs, or electronic muffs/plugs.	Hearing protection will be replaced as required by the Health, Safety & Security department. Staff will request replacement equipment through their Administrator/Supervisor.
Facility Services Stationary Engineers (who service s team boilers in Galt Collegiate Institute and Preston High School)	Mandatory use is required for staff working in steam plants when the boiler is operating.	Class B or BL hearing protection *such as earmuffs or earplugs.	Hearing protection will be replaced as required by the Health, Safety & Security department. Staff will request replacement equipment through their Facility Supervisor/Manager.

**Or other hearing protective devices as deemed appropriate by Health, Safety & Security.*

Appendix B: Fitting Instructions

Reusable Earplug/Custom Earplug

Reach around your head and pull up and back on your outer ear. This straightens out the ear canal, making way for a snug fit.

Hold the stem end of the earplug and insert it well inside your ear canal until you feel it sealing and the fit is comfortable.

Test the fit. In a noisy environment, and with earplugs inserted, cup both hands over your ears and release. You should not notice a significant difference in the noise level. If the noise seems to lessen when your hands are cupped over your ears, your earplugs are probably not fitted properly. Remove and re-fit. If you are unable to fit this type of hearing protection properly, use an alternative hearing protector such as earmuffs or disposable earplugs.

Always remove earplugs slowly, twisting them to break the seal. If you remove them too quickly, you could damage your eardrum.

Reusable earplugs should be inspected and cleaned often in soapy water. If they become hard, torn or deformed, they should be replaced.



Disposable Earplug

Hold the earplug between your thumb and forefinger. Roll and compress the entire earplug to a small, crease-free cylinder.

While still rolling, use your other hand to reach over your head and pull up and back on your outer ear. This straightens the ear canal, making way for a snug fit.

Insert the earplug and hold for 20 to 30 seconds. This allows the earplug to expand and fill your ear canal.

Test the fit. In a noisy environment, cup both hands over your ears and release. You should not notice a significant difference in the noise level. If the noise seems to lessen when your hands are cupped over your ears, your earplugs are probably not fitted properly. Remove, re-fit and test again. If you are unable to fit this type of hearing protection properly, use an alternative hearing protector such as earmuffs or reusable earplugs.

Always remove earplugs slowly, twisting them to break the seal. If you remove them too quickly, you could damage your eardrum.

Dispose of earplugs after use.



Earmuffs

Earmuffs offer excellent protection if the cups are fitted and adjusted properly. Your ears should be completely enclosed by the ear cups.

Adjust the cups up or down to fit the headband securely at the crown of your head. The best performance is obtained when the cushions form a tight seal against your head.

Test the fit. In a noisy environment, place the palms of your hands on both cups and push the cushions towards your head and release. You should not notice a significant difference in the noise level. If the noise seems to lessen when you press the cups, your earmuff is probably not fitted properly. Re-adjust and test again. If you are unable to fit this type of hearing protection properly, use an alternative hearing protector such as disposable or reusable earplugs.

Regularly check cushions for wear and clean them often with a damp cloth. If the cushions become hard, damaged or deteriorate, they should be replaced promptly.



