CSA Standard Z94.2-02
Hearing Protection Devices
- Performance, Selection, Care and Use

Scope and Application:

This standard describes performance and testing requirements for personal hearing protection devices. The hearing protectors covered in this standard include: communication headsets, earmuffs, earplugs, and helmets equipped with earmuffs. Noise exposed workers are those who are exposed to a noise exposure level greater than 85 dBA based on an 8-hour work day and 40-hour work week.

Definitions:
- **A-weighted sound level (dBA)** - is the frequency-weighted value of the sound level determined with a sound level meter and relates the sensitivity of the human ear to each sound frequency.
- **Attenuation** - is the reduction in sound pressure level at the ear when a hearing protector is worn.
- **Decibel (dB)** - is a unit of measurement to express sound pressure levels.
- **Earmuff** - is a type of hearing protector. Earmuffs have a headband and ear cups with a soft outer ring or cushion fitting tightly against the ear or sides of the head around the ear.
- **Earplug** - is a type of hearing protector worn in the external ear canal or in the concha against the entrance to the external ear canal.
- **Noise Exposure Level (Lex)** - is the normalized noise exposure over 8-hours.

Types of Hearing Protection Devices:
- **Earmuffs** - general and cap-mounted
- **Earplugs** - foam, premoulded, formable, custom-moulded, semi-insert
- **Helmets**

Specialized Hearing Protection Devices include:
- **Active protection devices** - noise-attenuating communication headsets; active noise reduction hearing protection devices and sound restoration hearing protection devices
- **Passive protection devices** - flat or uniform attenuation; frequency-sensitive protectors and amplitude-sensitive or level-dependent protectors

Hearing Protectors (are made of material that):
- can be cleaned and disinfected when shared by more than 1 person
- non irritating to the skin
- resistant to hair, skin oils and earwax
- do not lose their shape between temperatures at -7°C and greater than 50°C
- protectors for low and high temperature applications: do not lose their shape between temperatures at -20°C and greater than 50°C

General Requirements for hearing protection devices:
- used when administrative or engineering controls fail to reduce noise exposure to acceptable levels or are not practicable
- workers are trained on where, when, why and how hearing protectors should be used
- refresher training provided to workers on fit, care and maintenance of hearing protection devices every 2 years
- when sound exposure levels are greater than 105 dBA, workers wear both earplugs and earmuffs – double protection provides an additional 5 dB protection added to the highest attenuation of any single type of hearing protection device
- hearing protectors reduce noise exposures to ambient levels or below 85 dBA 8-hour, but not below 70 dBA
- refer to section 9.9.2 for the formulae to calculate the noise exposure level for 8-hour Lex, 8

(Over)
• audiometric testing is required to monitor the hearing of exposed workers and to
determine the effectiveness of the hearing protection device worn

**Fit, Care and Use of Hearing Protection Devices:**
• proper fitting technique recommended by the manufacturer for the selection of a
hearing protection device
• the hearing protection device must make a tight seal in the ear canal or against
the side of the head
• jewellery, hair or some types of clothing worn may interfere with the seal

**Packaging information must include:**
• attenuation Grade/Class of the hearing protection device
• the device is tested according to ANSI Standard S12.6, 1997, Method for the
  Measurement of Real-Ear Attenuation of Hearing Protectors
• a warning that a properly fitted hearing protection device will provide full
  attenuation
• the manufacturer's information

**Signs in the Workplace:**
• required in areas where noise levels are greater than 85 dBA
• a clear visible warning sign must be located at all entrances into the workplace
• text on the sign shall be in English and French and in the predominant language
  of the workplace
• signs shall include a pictogram, according to CSA Standard CAN/CSA-Z321-96,
  Signs and Symbols for the Workplace

This bulletin contains a summary of excerpts taken from the Standard, for general
information purposes only. This bulletin is not reflective of the complete
requirements that the Standard prescribes.

**Note:** *Manitoba Regulation M.R. 217/2006 Section 1.4 inconsistency:*
If there is an inconsistency between this regulation and a requirement contained
in a publication, code or standard referenced in this regulation, the provisions in
this regulation prevail.