

SAFETY MEMO

February 8th, 2021 – Noise Exposure



Did you know?

Reducing exposure to hazards is an important aspect to consider in managing a safe work environment. One of the dangers often present during a factory visit or during construction work is exposure to noise caused by equipment. Exposure to noise can cause damage to the inner ear resulting in tinnitus, temporary hearing loss or permanent hearing loss.

Applicable Regulations

In order to fully understand and comply with jurisdictional legislation, it is important to understand the two main methods of noise exposure level communication: the reference level and the equivalence coefficient. According to the Canadian Center for Occupational Health and Safety (CCOHS), "the reference level is the maximum continuous noise level allowable during a full eight-hour shift." The equivalence coefficient represents the value by which the sound level can increase when the exposure time is reduced by half.

According to jurisdictional legislation, the maximum exposure levels are:

- 90 dB with an equivalence coefficient of 5 dB in Quebec and the United States.
- 85 dB with an equivalence coefficient of 3 dB for the other Canadian provinces.
- 87 dB with an equivalence coefficient of 3 dB according to CCOHS.
- 85 dB in France and Switzerland.
- 87 dB in the UK.

Working in an environment with a noise level below 70 dB is considered safe because this noise level is not sufficient to cause permanent hearing loss in the inner ear. However, a noise level of 80 dB is considered worrisome for several government entities, even though the reference level is between 85 and 90 dB.



Figure 1: Hearing Protection- Earmuffs

Prevention and Protection

In general, it is recommended to wear hearing protection when the sound level exceeds 85 dB. Employees must be trained to correctly identify the necessary protective equipment before going to a site or a workplace with high noise levels.

According to CCOHS, there are three types of hearing protection:

- **Earplugs:** inserted in the ear canal. They may be pre-molded, moldable, rolldown foam, push-to-fit, or custom molded. Disposable, reusable, and custom earplugs are available.
- **Semi-insert earplugs:** consist of two earplugs held over the ends of the ear canal by a rigid headband.
- **Earmuffs:** 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.

