

NOISE IN CONSTRUCTION

1. Task

To control workers exposure to noise on construction sites, (to acceptable levels).

2. Hazards

Acute and cumulative damage to hearing, exposure to safety hazards due to lack of hearing, (not hearing warning signals).

3. Controls

Pre-Job Safety Assessment (PSA). Separation of workers from source of noise, CSA/ANSI approved PPE, muffling of equipment, workplace sound level monitoring. Adequate signage at entry points to noisy areas.

- ❖ Establish if a noise assessment is needed within areas of the job site. If people have difficulty speaking to each other over approximately 2 metres then a noise assessment is needed.
- ❖ The assessment must be performed by a competent person who understands applicable OHS and ANSI guidelines for noise exposure in the workplace and updated as conditions change.
- ❖ Initial estimated assessment of noise produced on a site from tools and equipment can be made available by using manufacturer's data or by way of testing equipment.
- ❖ Manufacturer's data on emitted tool or machinery noise (in decibels db) can usually provide a quick resolution on the type of hearing protection needed for workers.
- ❖ On multi contractor sites, various employers will need to agree who should co-ordinate compliance with regulations.
- ❖ Noise levels above 85 db(A) over an 8-hour work period is potentially damaging. As noise increases damage to the ear increases.
- ❖ Sound intensity doubles by every 3db. For every 3db increase in sound potential auditory damage doubles.

Maximum Permitted Daily Work Hours(hr) Without Hearing Protection	Decibels Increasing by 3(db)
8	85
4	88
2	91
1	94
½	97
¼	100

Noise scale based on hours worked as decibels increase from the 85db Cap

**** At 85db an 8-hour work shift is permitted without hearing protection. As the decibels increase from the 85 db cap, work duration is decreased as indicated above**

- ❖ Ear muffs or ear plugs must be worn by workers exposed to noise above 85db.
- ❖ Disposable ear plugs should not be reused after being removed from the ear during coffee and lunch breaks.
- ❖ Reusable ear plugs should be cleaned prior to insertion - wash hands.
- ❖ For exposure levels over 105db(A), two forms of protection are required (earmuffs and earplugs).
- ❖ If possible, controlling noise at the source is the best form of general protection.
- ❖ Adhere to all applicable legislated requirements including municipal noise by-laws.
- ❖ Around noisy tools and equipment, post signs indicating that hearing protection must be worn.
- ❖ Plan sites so that noisy operations are located away from personnel not directly involved.
- ❖ If possible, schedule noisy operations before or after hours to minimize exposure to other personnel.



Best Personnel Safe Work Practices & Procedures Manual

- ❖ Use quiet work practices such as using rubber mallets to erect and dismantle formwork.
- ❖ Use quiet construction equipment such as silenced compressors, and muffled combustion processes.
- ❖ Create a noise perimeter zone where only designated workers are allowed to enter.
- ❖ When orientating new employees and subcontractors, include information on noise levels, noise controls, and the selection, care, and use of personal hearing protectors.
- ❖ Provide training in why and how to prevent hearing loss.
- ❖ Use administrative and engineering controls to reduce potential exposure.
- ❖ Place barriers around noisy equipment that remains stationary i.e. air compressors, and diesel generators.
- ❖ Perform inspections/maintenance on equipment to ensure machinery is in good working order and ensure regular maintenance on mufflers and silencers.

Average db(A) For General Construction Activities

<u>Construction Trade</u>	<u>Average db (A)</u>
Carpentry	88
Formwork	94
Masonry	91
Iron Worker	106
Sheet metal	96
Heavy Equipment Operator	92
Boilermaker	107

Typical Noise Levels Associated with Construction Sites

Decibel-dB(A)	Equipment
111	Pile Driver
110	Air Arcing Gouging
108	Impact Wrench
107	Bulldozer-No Muffle
102-104	Air Grinder
102	Crane-Uninsulated Cab
101-103	Bulldozer-No Cab
97	Chipping Concrete
96	Circular Saw & Hammering
96	Jack Hammer
96	Quick-Cut Saw
95	Masonry Saw
94	Compactor-No Cab
90	Crane-Insulated Cab
87	Loader/Backhoe-Insulated Cab
86	Grinder
85-90	Welding Machine
85	Bulldozer-Insulated Cab
60-70	Speaking Voice

**** Hearing protection recommended above 85db(A)**

**** Double protection recommended above 105db(A)**