

## Construction Noise

- Construction workers are commonly exposed to hazardous levels of noise.
- It is common for people to lose some hearing with age, but the average 25-year-old carpenter has the ears of a 50-year-old person who has not been exposed to excessive noise.
- Hearing loss and tinnitus (ringing of the ears) can result from excessive noise exposure; something that usually occurs gradually over time without being noticeable at first.
- Temporary loss of hearing is a warning that the levels of noise you were exposed to were excessive. If that is repeated often enough, the loss can become permanent.
- The risk of hearing loss depends on a combination of the intensity of the noise levels you are exposed to and how long you are exposed. High intensity, very short duration impact noise can also be a significant hazard.
- Excessive noise levels have also been associated with increased fatigue, stress and elevated blood pressure.

*Customize this toolbox safety meeting and cover the issues that pertain to the specific types of equipment and procedures at your jobsite, particularly where you see red italics.*

### Allowable Exposure Levels

Occupational noise levels are measured with noise meters that express noise energy in terms of decibels measured on the A scale (dBA), with the meter set at a slow response.

Cal/OSHA's permissible exposure level (PEL) for non-impact noise—designed to protect most, not all employees—is summarized as follows:

Sound Level in dBA	Maximum Exposure Duration per 8-Hours
90	8 Hours
95	4 Hours
100	2 Hours
105	1 Hour
110	30 Minutes
115 dBA	15 Minutes
>115 dBA	Prohibited

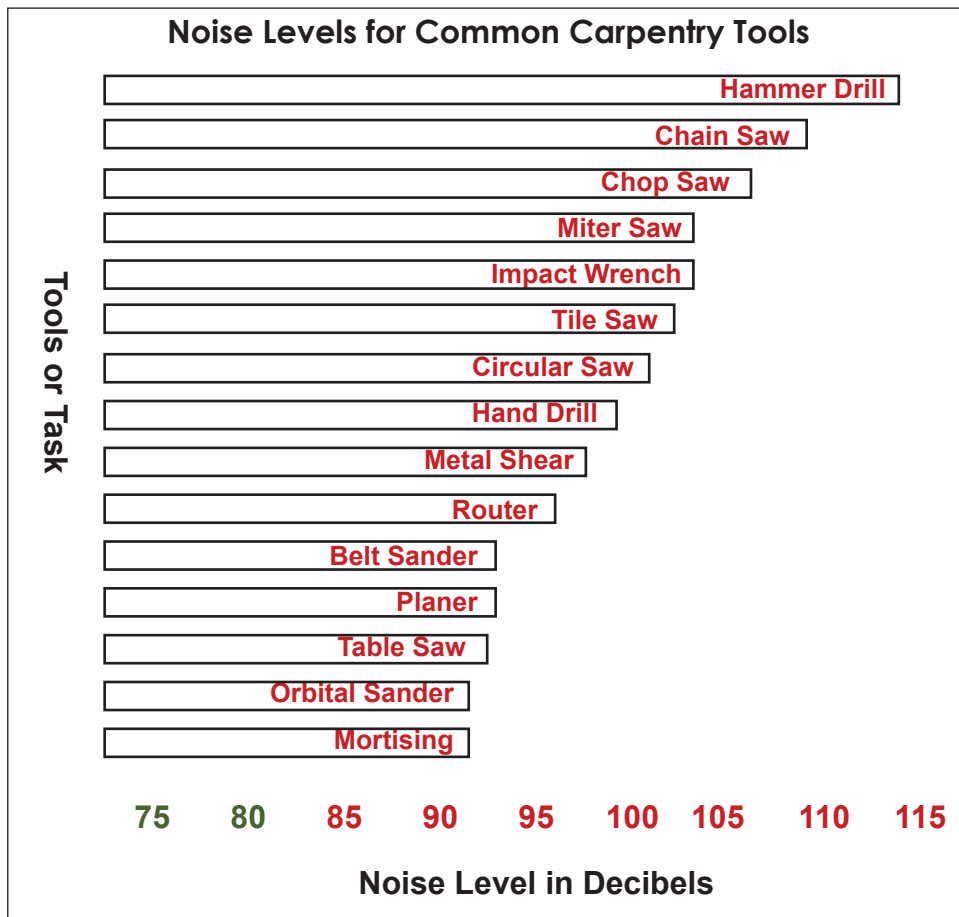
For example, if your noise exposure averages around 95 dBA for more than four hours, you must reduce the noise exposure. If that is not possible, wear hearing protection. *Refer to Table N-1 in Title 8 California Code of Regulations (T8CCR) section 5096 for more detailed permissible noise exposure durations.*

Hearing protection should also be used anytime you are exposed to impact noise (e.g., powder-actuated tools) louder than 140 dB.

Noise levels vary all the time, so they can be difficult to compare to the Cal/OSHA exposure limits. If there is a

question about whether noise levels are excessive, it is best to simply reduce the noise levels and/or wear hearing protection. Also keep in mind that more susceptible individuals can experience hearing loss with exposure levels as low as 85 dBA over an eight-hour period. *Discuss how noise levels will be measured and estimated at the construction site. Refer to the Resources, below, for assistance.*

**Basic rule-of-thumb:** If you must raise your voice to be heard by someone standing near you then the noise is probably louder than 90 dBA.



*Review and discuss the types of machinery and tools that will be used at the construction site and identify (1) which may be a source of hazardous noise, and (2) which workers may be close enough to warrant protective measures. Where protection is needed, first identify how noise exposure can be reduced. Where that is not feasible or adequate, identify who should be wearing hearing protection.*

## How to Protect Yourself—Reduce the Noise Exposure

- This should be the first thing to consider before resorting to hearing protection.
- Simply moving further away from the noise source can make a significant difference—e.g., relocate compressors or schedule work at a different time.
- Use quieter tools and equipment.
- Provide a barrier—something as simple sheets of plywood, preferably with a noise dampening material—between you and the source of noise.
- Enclose the source of noise if doing so will not cause overheating or obstruct necessary access to controls.

## Hearing Protection

- There are two basic types: earmuffs and ear plugs.
- Ear plugs come in two basic forms:
  - Soft and moldable that you roll up, insert in your ear, and expand to provide a barrier.
  - Have flanges that help provide an effective noise barrier.

Regardless of the type, it is very important to:

- Insert/wear them properly—refer to the instructions on the packet.
- Only wear types that have an EPA Noise Reduction Rating (NRR) number.

- Don't reinsert them if they are dirty. Wash your hands and insert new ones.

*Discuss the types of hearing protection that are to be used at the construction site, and how they should be properly worn.*

## Discussion Questions

- What are the sources of noise that can be expected on this job?
- Are there defined areas where hearing protection is required?
- How are those areas defined?
- When should hearing protection be used?
- Where is the disposable hearing protection supply located?
- What should be done if the noise source is from another trade?
- How will we be reducing noise levels—any suggestions?

## Disclaimer

The requirements regarding occupational exposure to noise are covered in T8CCR, section 5096 Exposure Limits for Noise and must be referred to for details on the regulatory requirements.

The information provided is not meant to be either a substitute for or legal interpretation of the occupational safety and health regulations. Readers are cautioned to refer directly to T8CCR for detailed information regarding the scope, specifications, exceptions, and for other requirements of section 5096 and other Cal/OSHA regulations that may be applicable to their operations.

Make sure you document this training and have those records readily available.

## Some Definitions

- **A-scale:** the noise meter filters out some of the lower frequency sound, better reflecting how the ear actually responds to noise.
- **Slow response:** noise levels fluctuate quickly. The noise meter should have a setting that slows down the meter response, so noise levels can be more easily read.
- **Noise measuring devices:** should have an accuracy of + or – 2 dBA, or better.
- **NIOSH:** the National Institute of Occupational Safety and Health.
- **EPA NRR:** a rating of the hearing protection's ability to reduce noise levels if properly worn—usually printed on the protector packet or box.

## Resources

- Cal/OSHA **Pocket Guide for the Construction Industry**
- Cal/OSHA T8CCR **General Industry Safety Orders, section 5096**
- Cal/OSHA T8CCR **Construction Safety Orders**
- Cal/OSHA **Publications**
- Cal/OSHA **Consultation Service:** InfoCons@dir.ca.gov or 800-963-9424
- elcosh/CPWR Toolbox Talk: **Noise and Hearing Protection**
- elcosh/CPWR Controls to Reduce Noise in Construction: **Noise Perimeter Zones**
- NIOSH **Sound Level Meter App**
- NIOSH **Noise and Hearing Loss Prevention**
- OSHA Salt Lake City Laboratory **Noise and Hearing Conservation**
- OSHA **Pocket Guide on Noise in Construction**



# Employees in Attendance

Date:

Person conducting the meeting:

Name (Print)	Signature