

Loss Control Bulletin

Prolonged exposure to excessive noise can produce Noise-Induced Hearing Loss (NIHL). This gradual loss of hearing is the result of damage to the inner ear and is not reversible. Unabated, the hearing loss can reach disabling levels and qualify for hearing loss compensation in most states.

The damaging effects of noise are dependent on the sound pressure levels (loudness) and frequency of the noise, the duration of exposure, and an individual's susceptibility. From noise studies on hearing loss, the National Institute for Occupational Safety and Health (NIOSH) estimated that from prolonged exposure to 90 dBA (90 decibels), about one employee in five will develop disabling NIHL. At 100 dBA, nearly half of the employees exposed will develop disabling NIHL. The following table lists the average sound levels in A-Weighted decibels and the percentage of exposed workplace population expected to be at excess risk of developing disabling hearing loss (corrected for aging).

Sound Pressure

Level (dBA)	80	85	90	95	100
% Population at risk	1	9	21	35	49

A significant portion of the population risks disabling hearing loss at exposures below 90 dBA for 8 hours. An 8-hour average of 85 dBA is the OSHA Action Level and a Hearing Conservation Program is required when noise exposures equal or exceed the Action Level.

Employers are responsible for reducing and/or controlling excessive noise exposures. This can be accomplished by one or a combination of the following:

- Engineering modification to the noise source.
- Containing the noise with walls, shields, silencers, mufflers, vibration isolation, room treatments, damping, or acoustical baffles.
- Administrative control of exposure time.

Despite these efforts employees may still be over-exposed to noise, requiring implementation of a hearing conservation program as described in the General Industry Safety Orders §5095 through §5100. The requirements are detailed and technical. This bulletin attempts to summarize them in general terms, but you are reminded that the Standard should be referred and adhered to.

Some aspects of a hearing conservation program are required in the construction industry. By default, California has adopted U.S. Department of Labor Occupational Noise Exposure standard 1926.52 that requires that hearing protection be provided to employees who are exposed to noise levels that exceed those listed in the table provided in the standard.

Hearing Conservation Program

If feasible engineering or administrative controls cannot be implemented, or until they are implemented, all overexposed employees need to be included in a Program containing the following elements.

Audiometric Testing

To determine baseline and pre-employment hearing levels, and to monitor the effectiveness of the hearing conservation program with annual tests. Baseline audiograms should be performed as soon as possible upon employee assignment in an area identified as presenting overexposure to noise.

Audiograms must be examined by a qualified person to determine whether a “significant shift” in hearing has occurred. If a change has occurred, the employer must then:

- Inform the employee in writing within 21 days of the determination.
- Fit or refit the employee with appropriate hearing protection.
- Refer the employee for clinical audiological evaluation or an audiological examination.

Hearing Protection Devices

Ear plugs, muffs, or canal pods to attenuate the noise reaching the employee’s ear. The hearing protection should be worn by all employees in the program. The protection target for assessing the adequacy of Hearing Protection Devices should be 85 dBA.

Warning Signs

When the sound levels are greater than 85 dBA’s Warning Signs should be posted in those areas such as or similar to: “CAUTION HEARING PROTECTION REQUIRED”

EMPLOYEE NOTIFICATION

Employees should be informed of noise monitoring results within 30 days.

Training Program

To encourage the wearing and proper use and care of hearing protectors, and to communicate to employees the purpose of the hearing conservation program.

Record Keeping

Recordkeeping of monitoring and audiometric data must be maintained for an indefinite period.

Summary

To be successful, a hearing conservation program must be a cooperative effort with employees. The training section of the program is of vital importance. There is much information available on suppressing or containing unwanted noise and the various types of personal protective devices.

Definitions

-dBA = Sound level as measured on the A scale

-TWA = Time weighted average

-Action Level = 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, an equivalent dose of 50% of the total allowable exposure.

Please contact your Republic Indemnity Loss Control representative for additional information.

Website Reference – General Industry Safety Order §5095 through §5100

<https://www.dir.ca.gov/title8/sb7g15a105.html>

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10625