

## Comparison of US Hearing Conservation Regulations and Recommendations

The table is provided to permit a quick comparison of the hearing conservation requirements of US general industry (OSHA), mining (MSHA), construction, and recommendations of the NIOSH *Criteria for a Recommended Standard: Occupational Noise Exposure*. Please note following conditions for use of this table.

1. The *Criteria Document* is a NIOSH recommendation, and is not a compliance document.
2. Recordable or reportable hearing loss is addressed under OSHA in CFR 1904, and directly in the MSHA rule.
3. This analysis is not intended to be all-inclusive; please check with the applicable agency for updates and current status.

Issue	Description and Definition	OSHA 29 CFR 1910.95	MSHA 30 CFR Parts 56 and 57 et al.	Construction 29 CFR 1926 Parts 52 and 101	NIOSH Criteria Document DHHS(NIOSH) Publication No. 98-126
Action Level	The exposure level which requires program inclusion, optional hearing protection, hearing tests, and training.	85 dBA TWA	85 dBA TWA	While a requirement for a "continuing, effective hearing conservation program" is included, no criteria for such a program are described.	Single Recommended Exposure Limit (REL) of 85 dBA TWA for hearing loss prevention, HPD and noise control.
Criterion Level	The exposure level which requires mandatory hearing protection and investigation of feasible controls. Permissible Exposure Limit (PEL).	90 dBA TWA	90 dBA TWA	90 dBA TWA	See above.
Monitoring	Assessment of noise exposure.	Once to determine risk and HCP inclusion; from there as conditions change resulting in potential for more	Mine operator must establish system to evaluate each miner's exposure sufficiently to determine continuing	Not stipulated.	Every 2 years if any exposure >85 dBA TWA

		exposure.	compliance with rule.		
Exchange Rate	The rate at which exposure accumulates. Exchange rate indicates increase/decrease in dB TWA at which dose doubles/halves.	5 dB	5 dB	5 dB	3 dB
Single Event Noise Criteria	Noise exposure events which merit regulation based on single occurrences.	No exposure > 115 dBA slow response; should not exceed 140 dB peak SPL.	"P" code violations for exposure > 115 dBA; peak to be integrated with other measurements.	Not stipulated; inferred ceiling limit of 115 dBA.	No protected or unprotected exposure to exceed 140 dBA.
Audiometry	Screening hearing tests used to assess the effect of noise exposure on the worker.	Required annually for all workers exposed at or above 85 dBA TWA. Baseline test within 6 months of exposure; 12 months if using mobile testing service, with HPD in the interim. 14-h quiet period required before baseline test; HPD acceptable for quiet time.	Same as OSHA but annual audiograms at miner's discretion. Baseline test within 6 months of exposure, or 12 months if using mobile testing service with HPD in the interim. 14-h quiet period required before baseline test; HPD acceptable for quiet time.	Not stipulated.	Required for all workers exposed at or above 85 dBA TWA. Baseline test pre-placement or within 30 days of exposure. 12-h quiet period required before baseline tests; HPD not accepted for quiet time.
Presbycusis or Age Correction	Hearing test "correction" for the anticipated effects of age.	Allowed.	Allowed.	Not stipulated.	Not allowed.
Qualifications for Hearing Testers	Qualifications for persons providing tests and supervising program.	Program to be supervised by licensed or certified audiologist, otolaryngologist, or other physician. Tester responsible to	Program to be supervised by licensed or certified audiologist or physician. Tester must be certified by CAOHC or	Not stipulated.	Program to be supervised by audiologist or physician. Tester must be certified by CAOHC or equivalent.

		supervising professional; CAOHC certification or demonstrated competence. Certification not required when using microprocessor audiometers.	equivalent.		
Hearing Test Requirements	Criteria to ensure hearing test validity.	14 hours of quiet prior to the test; HPD allowable. Allowable background noise levels in test environment stipulated.	14 hours of quiet prior to the test; HPD allowable. Background noise in test environment per "scientifically validated procedures".	Not stipulated.	No exposure >85 12 hours prior to test; HPD not allowed. Background noise in test environments per ANSI S3.1-1999 or revision.
Hearing Protection	Exposure requirements and conditions for hearing protection device (HPD) use; all criteria consider HPD to be temporary until exposure is engineered to below criterion or action level.	Optional at 85 dBA TWA; mandatory at 90 dBA TWA, or at 85 dBA TWA for workers with STS. Protect to 90 or to 85 with STS. Choices must include a "a variety" which OSHA has interpreted as at least 1 type of plug and 1 type of muff.	Same as OSHA, but choices must include 2 plugs and 2 muffs. Double hearing protection (muff over plug) must be provided at exposure >105 dBA TWA.	Mandatory at 90 dBA TWA. Requirement for selection and fitting by a "competent person", and specific exclusion of "plain cotton" as hearing protection.	Mandatory at 85 dBA TWA; protect to 85. Double protection (plug and muff) recommended at exposure >100 dBA TWA.
Evaluation of Hearing Protector Effectiveness	Method of assessing adequacy of hearing HPDs	Use manufacturers labeled NRRs to assess adequacy, but use 50% derating of NRRs to compare effectiveness of HPDs to efficacy of hearing conservation	No method included in standard. Preamble to regulation indicates that compliance guide will follow with suggested procedures.	Not stipulated.	Labeled NRRs must be derated by specified amounts (25% for muffs, 50% for foam plugs, and 70% for other plugs) unless data available from ANSI S12.6-1997 Method B.

		program.			
Noise Control	Investigation and implementation of feasible engineering and administrative control measures.	Feasible controls required where TWA >90 dBA.	Feasible controls required where TWA >90; even if controls do not cross threshold, engineering required to reduce exposure to the lowest level possible. Administrative controls acceptable, but must be provided to the miner in writing and posted.	Feasible controls required where TWA >90 dBA.	Feasible controls to 85 dBA TWA. Administrative controls must not expose more workers to noise.
STS (Standard Threshold Shift; NIOSH Significant Threshold Shift)	A change in hearing compared to an earlier (baseline) hearing test which requires follow-up action.	Average 10-dB shift from baseline hearing levels at 2000, 3000 and 4000 Hz.	Average 10-dB shift from baseline hearing levels at 2000, 3000 and 4000 Hz.	Not stipulated.	15-dB shift for the worse from baseline at any test frequency confirmed with follow-up test.
STS Follow-up	Actions required when STS is detected.	Notify worker within 21 days, unless STS is not work-related, re-fit employee with HPD. Refer for further testing if necessary or if problem with HPD. Inform employee of need for further testing if problem unrelated to HPD usage is suspected.	Notify worker within 10 days; unless STS is not work-related, retrain, reissue and refit HPD, and review effectiveness of noise controls to correct deficiencies.	Not stipulated.	Notify worker within 30 days; provide instruction and refitting of HPD; additional training on hearing loss prevention, effects of noise. Consider reassignment of worker to quieter area.
Warning Signs and Postings	Employee notification of noise areas	Hearing Conservation Amendment shall be posted in workplace.	If administrative controls are used, procedures must be posted.	Not stipulated.	Signs must be posted at entrances to areas with TWAs routinely >85.

Recordable or Reportable hearing loss	Amount of hearing loss triggering reporting requirements on workplace injury/illness logs.	Covered under CFR 1904; January 2001 revision requires recording confirmed STS.	25-dB average shift from baseline at 2000, 3000, and 4000 Hz.	Not stipulated.	Not indicated.
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