

## Proof of Training

Revised June 2017

Print name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Hearing Conservation Program

#### Purpose

The purpose of the Hearing Conservation Program is to minimize occupational hearing loss by providing hearing protection and training.

#### Scope

This policy will apply to all work performed by employees and subcontractors including, but not limited to the following activities: construction, installation, demolition, remodeling, relocation, refurbishment, testing, and servicing or maintenance of equipment or machines and at other times when hearing protection is required.

### Responsibilities

#### Management (Board of Directors and Project Managers)

Managements responsibilities include but are not limited to: using engineering, administrative controls and personal protective equipment to limit worker exposure. Providing adequate hearing protection for workers, conducting noise surveys and providing training for workers. Management is responsible for ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this program are readily available where and when they are required. Additionally, management will monitor the effectiveness of the program, provide technical assistance as needed, and review the program bi-annually.

#### Program Manager

Dave Simpson is responsible for the development, documentation, training and administration of the program. This position carries the responsibility of insuring this program is adhered to and that proper reporting is executed.

#### Supervisors (Superintendents and Foreman)

Supervisors are responsible for ensuring that a task specific job hazard analysis (JHA), also known as a safe work plan, is developed. The JHA will select, implement and document the appropriate site-specific control measures as defined within this policy. Supervisors will direct the work in a manner that ensures the risk to workers is minimized, adequately controlled and that practices defined by this policy will be followed. Supervisors are responsible for ensuring Unger Construction employees and subcontractors are following expectations. Supervisors will be held accountable for enforcing the requirements of this program. Undesirable behavior will not resolve itself, therefore supervisors must be directly involved with modifying behaviors inconsistent with program expectations. Supervisors will be held accountable for enforcing Unger Construction's disciplinary program.

### Workers (Employees and Subcontractors)

Workers shall use company approved hearing protection as defined in this policy, request new hearing protection as needed. Unger Construction has high expectations and requires safety excellence for each employee, crew, project and for our entire company. Workers are required to follow the minimum procedures outlined in this program. Workers are responsible for knowing the hazards and the control measures established in the JHA. Workers are responsible for using the assigned PPE in an effective and safe manner. Workers are responsible for stopping unsafe acts and correcting unsafe conditions on the spot as soon as they are discovered. Any deviations from this program must be immediately brought to the attention of your supervisor. Workers that choose to conduct themselves in a manner that is inconsistent with these expectations will be held accountable for those decisions and may incur disciplinary actions.

### Hazardous Material Survey

Unger Construction requires hazardous materials surveys before demolition or renovation work begins. The survey shall include all of the following: A visual inspection of a facility or a portion thereof for suspect materials, sampling and laboratory analysis of any suspect materials found for the presence of asbestos. The hazardous materials survey will also furnish a written report that includes: a description of the area(s) visually inspected, a detailed description of any suspect material sampled, the results of any laboratory analysis of suspect materials, the method of analysis, and the total amount of asbestos containing material. Typically a floor or roof plan is included with the report to reference the written information visually.

The person conducting the survey must be certified pursuant to OSHA and/or EPA regulations. The survey may be performed by a certified Site Surveillance Technician (SST) under the supervision of a licensed consultant. Note: The survey may be performed by a certified Site Surveillance Technician (SST) under the supervision of a licensed consultant. Note: The survey needs to be kept in a project file so that it can be accessed when working on future projects.

If lead or asbestos have been confirmed to be present employees and subcontractors must follow Unger Construction's Lead and/or Asbestos program. If hazards such as asbestos or lead will be disturbed during remediation, a properly licensed professional must perform the work and follow appropriate regulations.

### Job Hazard Assessment (Safe Work Plan)

Unger Construction utilizes JHA's as our means of hazard assessment and establishing a safe work plan. JHA's are performed by supervisors and/or workers. Our library of hazard assessments is maintained on the "S" drive. Before beginning a new task refer to the JHA library, generally speaking all scopes of our work are covered. For situations that have not yet been covered select one that is substantially similar and use it as a baseline. JHA's on the "S" drive are organized by work area and job description. JHA's include strategies for elimination, substitution, engineering and administrative controls. After applying all appropriate reduction and elimination technique, the remaining hazards will be analyzed and the proper PPE to reduce the hazards will be selected. PPE will be identified for hazards that are in the process of being reduced or eliminated and/or when hazard-reduction efforts are not 100% effective in eliminating the hazards.

For complex or moderate to high hazard tasks, tasks where an additional level of safety planning is needed, the safety director will perform the JHA with the supervisor and workers.

### Training

Affected workers shall attend training that shall include but not be limited to: how noise affects hearing loss, OSHA's hearing protection standard, engineering and administrative controls of the Hearing Conservation Program, audiometric testing and the rules/procedures required by this program.

Each worker shall be instructed as to their responsibilities in the Hearing Conservation Program by their superintendent or foremen upon initial hiring, upon a change in job assignment, and at periodic safety meetings. If a worker must use personal hearing protection equipment, they shall be instructed in the proper use of ear plugs and other forms of hearing PPE.

All personnel involved in tasks requiring hearing protection will be trained in the requirements of this program with assistance from the supervisors. Training shall be performed before employees are assigned duties in areas that have the potential for noise.

The training shall include: The work practices that must be followed and the selection and use of personal protective equipment.

Retraining will be performed when work site inspections indicate that an employee does not have the necessary knowledge or skills to safely work in or around noisy environments, or when changes to this program are made.

### Periodic Monitoring

In order to assess changes in workplace exposures, employee compliance with the program, and the effectiveness of training Unger Construction Co. shall conduct periodic monitoring on at least an annual basis.

### Potential Noise Exposure

Employees of Unger Construction and subcontractors fall into three noise exposure levels.

- 1) Office workers, operators of powered equipment or equipment with enclosed cabs, and workers who are below the allowable eight hour time-weighted average exposure of 85 dBA.
- 2) Operators of powered equipment who are above the 8 hour TWA action level of 85 dBA but below the permissible exposure limit of 90 dBA
- 3) Operators of powered equipment or equipment with open cabs who exceed the permissible 8 hour TWA exposure limit of 90 dBA.

Workers in each of these categories must be notified of their probable noise exposure levels. All workers shall be instructed as to the implementation of administrative or engineering control methods within their areas of responsibility. Workers above the action level but below the permissible exposure limit will be instructed that personal hearing protection equipment is strongly recommended, but not required. Workers above the permissible exposure limit will be instructed that personal hearing protection equipment is required as part of their job.

### Audiometric Testing

Audiometric testing will be provided for employees whose exposure exceeds the 8-hour time weighted average of 85 dBA, at no cost to the employee. Each employee's baseline assessment will be conducted within 6 months of their first exposure above an effective noise reduction rating of 90 dBA.

Baseline assessments shall be performed at 14 hours of rest or isolation from workplace noise above 85 dBA. Annual audiograms will be performed for workers exposed above the TWA of 85 bBA. If a threshold shift has occurred in the audiogram the employee will be notified in writing within 21 days of the determination. Employees experiencing a threshold shift shall be provided hearing protection with a greater noise reduction rating and will be retrained. Additionally, the employee shall be referred for a medical hearing evaluation.

### Discussion

Sound level measurements are not linear, they are logarithmic. An increase of 5 decibels represents a doubling of the sound level. Note in the permissible noise exposure limits on page 8 that for every 5 decibel increase the allowable time limit is cut in half.

### Administrative Controls

#### *Evaluation of Work Methods that Produce Noise*

The Supervisor will evaluate the need for hearing protection by referring to the sound level data tables on pages 5 -8. If the work produces a noise level above 90dBA one or more methods of hearing protection shall be implemented. Foam inserts, ear muffs, foam inserts and ear muffs (see PPE selection on pages 8-9) and/or worker rotation. See the permissible noise exposure limits on page 9 and how to select PPE on pages 8-9. When applicable, workers should be rotated to reduce the duration of exposure.

### Engineering Controls

As of this time few engineering controls are available for construction workers, however as they become available Unger Construction will evaluate them.

### Equipment Selection

Whenever economically and practically possible, equipment or tools that produce a level of noise below the action level shall be used or substituted for equipment that produces noise above the action level.

### Equipment Maintenance

Equipment shall be properly maintained and operated so as to minimize noise production. Mufflers shall be used on gas or diesel equipment to reduce noise levels and maintained in good condition.

**Sound Level Data**

<b>Source</b>	<b>dBA</b>
Air grinder	100-105
Air gun	108
Air track drill	113
Air, compressed, blowing out street cuts	104
Asphalt grinder	111-116
Backhoe	89
Bar bender	104
Belt sander	93-104
Belt sander, unloaded	95
Brick mason drilling and chipping brick, concrete, plaster	91
Bricklayers - bricking, blocking, tiling	92
Bricklayers - grouting and mortaring	93
Bricklayers - pointing, cleaning, caulking	95
Bulldozer	102
Carpenter constructing wood frams and concrete forms	87-98
Carpenters - building forms	93
Carpenters - interior finish work	89
Carpenters - layout work	91
Carpenters - shop work	89
Carpenters - stripping forms	95
Carpenters - welding	95
Carpenters - wood framing	91
Cement masons - finishing concrete	84
Cement masons - floor leveling	70
Cement masons - grinding	95
Cement masons - patching concrete	93
Cement masons - placing concrete	88
Cement masons - repairing concrete	89
Cement masons - setting forms	87
Chipping gun, pneumatic, chipping concrete and plaster	105-112
Chipping hammer	98-104
Circular saw cutting laminated countertop	108
Compactor	108
Compactor, vibratory	92
Compressed air gun	93
Compressor, air	90
Compressor, air	97
Compressor, air, portable	81
Compressor, air, portable	94

**Sound Level Data**

<b>Source</b>	<b>dBA</b>
Concrete breaker	102
Concrete form finisher	93
Concrete mixer	94
Concrete mixing truck	85
Concrete pump	99
Concrete saw	98
Concrete vibrator	90
Core drill drilling brick, concrete, steel	90
Crane	99
Crane, tower	87
Curb machine	93
Cutting concrete	103-113
Cutting wood	85-116
Demolition (removing plaster and metal ductwork)	93-103
Drill, electric	102
Drilling rebar holes in brick, concrete, steel	92-98
Drywall installer	90
Electricians - installing cable tray	92
Electricians - installing slab conduit	91
Electricians - installing trench conduit	96
Electricians - installing wall conduit	91
Electricians - panel wiring, installing fixtures	87
Electricians - pulling wire	96
Electricians - sheet metal work	82
Elevator installer	96
Excavation equipment breaking up and moving concrete	93-99
Excavator	101-102
Forklift	89
Framing saw	82
Front end loader	93
Generator	98
Generator, portable	76
Grader	87
Grinder, electric	100
Hammer drill drilling into concrete	95
Hammer, air	110
Hand shovel cleaning street cuts	87
Hilti Gun	103
Impact wrench, loaded	102

**Sound Level Data**

<b>Source</b>	<b>dBA</b>
Insulation workers - applying insulation by hand	83
Insulation workers - sheet metal work	78
Ironworkers - bolt up	94
Ironworkers - erecting Iron	92
Ironworkers - grinding	92
Ironworkers - laying metal deck	100
Ironworkers - rigging	94
Ironworkers - setting forms	88
Ironworkers - tying and placing rebar	96
Ironworkers - welding and burning	98
Jackhammer, pneumatic	120
Jackhammer, small	98
Laborer - concrete pour	97
Laborer - formwork	88
Laborer - installing drains and roughing concrete	100
Laborer stripping concrete forms	81
Laborers - building forms	92
Laborers - chipping concrete	103
Laborers - demolition	99
Laborers - finishing concrete	85
Laborers - floor leveling	88
Laborers - grouting	86
Laborers - interior finish	85
Laborers - layout	80
Laborers - placing concrete	92
Laborers - rigging	93
Laborers - stripping forms	92
Laborers - wood framing	87
Masonry restoration workers - bricking, blocking, tiling	87
Masonry restoration workers - grinding	99
Masonry restoration workers - pointing, cleaning, caulking	77
Operating engineers - grade checking	90
Operating engineers - break, rest, lunch, cleanup	86
Orbital sander, loaded	65-84
Pavement breaker, pneumatic	108
Paving machine	90
Paving machine	89
Piledriver - drop hammer on concrete pile	83
Piledriver - drop hammer on steel pile	93

**Sound Level Data**

<b>Source</b>	<b>dba</b>
Piledriver - vibratory on steel pile	85
Pipe threader	92-97
Plasma arc cutting machine	95-100
Pneumatic hammer chipping concrete	109
Portable air compressor	77-85
Pump	96
Rattle Gun	98
Rebar worker	95
Reciprocating saw, unloaded	89-95
Roller/compactor	97
Rofer cutting and installing roof decking	90-100
Rotohammer	98
Router	102
Router cutting holes in drywall	96
Saw, band	89
Saw, chop	98
Saw, chop, cutting 20 gauge steel stud	109
Saw, chop, cutting steel furrings	101
Saw, circular	102-104
Saw, cutoff (gas)	94-97
Saw, cutoff (gas)	109
Saw, jig unloaded	84-92
Saw, jig, cutting laminated countertop	96
Saw, miter loaded	92-96
Saw, power hack	77
Saw, radial arm	96-100
Saw, table	100

If the table has a noise level *range* use the highest value. Contact the safety department for tasks that are not listed in the table. They will perform a sound level measurement for your specific task.

Cal OSHA has time limitations for workers that are exposed to noise level above 90 dBA, see the table below to determine the time restrictions.

Cal OSHA

Permissible Noise Exposure Limits

<b>Noise Level</b>	<b>Time Limit</b>
90 dBA	8 hours
95 dBA	4 hours
100 dBA	2 hours
105 dBA	1 hour
110 dBA	30 minutes
115 dBA	15 minutes



### Personal Hearing Protection Equipment – Selection

PPE shall be supplied at no cost to the employees. Workers requiring hearing protection due to the noise level in the work area being at or above the action level, shall use hearing protection equipment.

Foam inserts come in two styles; single use and reusable. Foam inserts shall have a NRR of at least 30. Single use inserts shall be discarded after use. Reusable inserts shall be cleaned before and after use with soap and water or an approved pre-wetted wipe, they shall be replaced when they are damaged.



Single use and Reusable Inserts

Ear muffs come in a variety of styles and functions. Ear muffs shall have an NRR of at least 20. Ear muffs shall be cleaned before and after use with soap and water or an approved pre-wetted wipe, they shall be replaced when they are damaged.



### Hearing Protection Calculation

Hearing protection equipment will have a noise reduction rating (NRR) provided by the manufacturer. The higher the number the greater the protection. With that said OSHA uses a formula to de-rate the manufacturers NRR to determine an effective or actual noise reduction rating which is significantly below the manufacturers claim.

Use the following formula to determine the effective NRR for any “single” (foam inserts –or- ear muffs) means of hearing protection. The manufacturers NRR – 7, then divide by 2. Example  $33 - 7 = 26$ .  $26 / 2 = 13$ . The effective NRR rating for a product that has a stated value of 33 is actually 13. This represents an error of 20 decibels, or 4x the noise.

#### *Dual Protection*

If after reviewing the sound level data table and applying the de-rated NRR value the noise level is above 90dBA additional means of protection will need to be applied; dual hearing protection or worker rotation.

Dual hearing protection is using foam inserts and ear muffs combined. The de-rating formula for dual hearing protection is not the same as for single protection. Use the NRR of the highest rated product then subtract 7, then add 5. See the example below

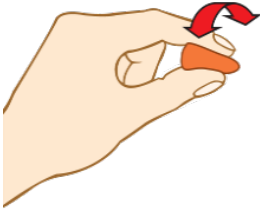
For this example the inserts have a NRR of 29, the ear muffs have an NRR of 24. The actual values for your products will be different. This is simply an example calculation to demonstrate the concept.  $29 - 7 = 22$ .  $22 + 5 = 27$ . The effective NRR rating for these products is 27.

### Performing the hearing protection calculation to determine proper protection is a multiple step process

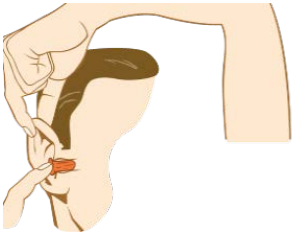
- 1) Select a task from the sound level data table and record the value.
- 2) Determine the effective/actual value of the hearing protection equipment.
- 3) Subtract the actual NRR from the value from the sound data table.
- 4) Compare the adjusted noise level to the permissible exposure limits. (Time allowed)
- 5) If the adjusted noise level is below 90dBA the work can be performed for a full 8 hour shift. If the noise level is above 90dBA then administrative controls, worker rotation will need to be implemented to ensure no individual worker is exposed over the maximum time allowed.

### Use of Hearing Protection PPE

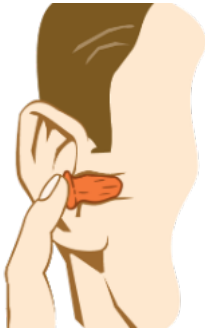
Workers shall use the above personal hearing protection equipment at all times while operating equipment or tools that create noise at or above the action level. The following demonstrates the proper method to insert foam ear plugs.



Roll entire earplug into a crease-free cylinder.



Pull back ear by reaching over head with free hand, gently pull top of ear up and out.



Insert earplug well into ear canal and hold until it fully expands.

Incorrectly inserted earplugs offer little to no protection. A quick quality control measure is to cup your palm over your ear. If the background noise changes (less) then your inserts are not properly installed.



0 dBA

0 dBA

13 dBA

Program Enforcement

The Hearing Conservation Program shall be enforced by a disciplinary program as outlined in the company's IIPP. Conversely, compliance with the program shall be a positive action to be noted during employee performance reviews.

Record Retention

Sound level surveys, training records and audiograms will be kept on the "S" drive.