مركز أبوظبي للسلامة والصحة المهنية
ABU DHABI OCCUPATIONAL SAFETY AND HEALTH CENTER
اوشاد oshad

الضوضاء المهنية
OCCUPATIONAL NOISE

LIFE NEEDS SOUND

Wear these

OR

Wear this

BRIEF GUIDE
TO CONTROLLING NOISE

INTRODUCTION

Loud noise at work can damage people's hearing and lead to risks to safety. This leaflet explains what employers need to do to comply with the requirements of the Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) to protect your staff from noise at work. The information within this leaflet will also be useful for your workers

This leaflet tells you about:

- the harm that noise can cause;
- the legal duties of employers;
- identifying if there is a problem with noise in your workplace;
- controlling noise and preventing harm.

PROTECT
YOUR
HEARING

WHAT IS NOISE?

Noise is all around us – at home, at leisure and at work. If noise is too loud and we are exposed for too long it can damage our hearing and affect our safety at work. Exposure to high levels of noise may lead to hearing loss and other harmful health effects.

Many industries have workplaces where excessive noise could be a risk to workers or the public – construction and civil engineering, demolition, roadworks, engineering, manufacturing, fabrication, forging or pressing, bottling or canning plants and foundries to name a few

Power-tools, noisy machinery or engines, chainsaws, drilling, equipment or operation with an explosive action - such as cartridge operated tools, detonators or guns - impact noise from hammering, drop forging, pneumatic impact tools, can all create excessive noise. Even some chemicals and substances used in the workplace – known as 'ototoxic' - can contribute to hearing damage when combined with excessive noise.

HOW NOISE CAN BE DANGEROUS

Damage caused by noise at work can cause temporary or even permanent hearing loss. Temporary deafness can follow being in a noisy place for a while, then often gets back to normal within hours.
But this is a warning sign that you could be damaging your hearing permanently if you are exposed to the loud noise too often. Sudden loud and explosive noises can also cause permanent hearing damage or deafness.
Usually, hearing loss happens gradually and is often only noticed with ageing. But young and older people alike can suffer from hearing loss or deafness caused by excessive noise. Conversations become harder to hear, certain words or sounds are misunderstood, people notice themselves speaking more loudly or needing to turn up the volume on electronic devices.

Noise can cause other damage such as tinnitus – a constant ringing, whistling, buzzing or humming in the ears – which can be very distressing and make it difficult to sleep or concentrate.

Noise at work can also affect the performance of your staff, continual loud noise or hearing loss can also affect communication skills and make it harder to hear safety or warning signals. It can also reduce awareness of surroundings, leading to safety risks – even injury or death.

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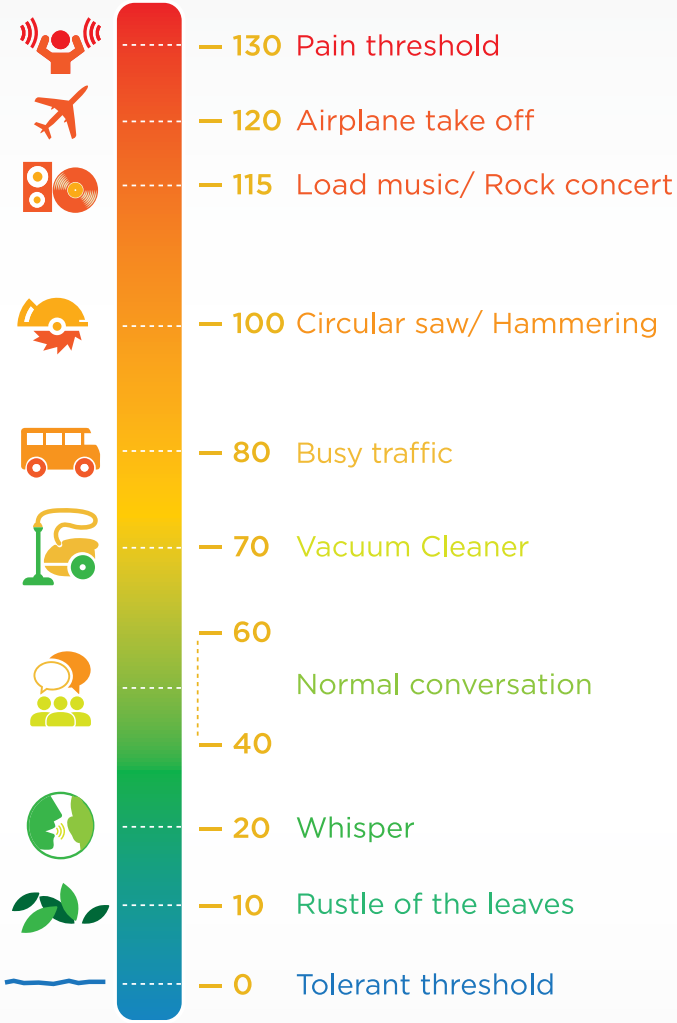
DIFFERENT NOISE LEVELS



WHAT ARE THE LEGAL REQUIREMENTS?

OSHAD-SF – CoP 3.0 – Occupational Noise v3.0 requires that all employers identify any high noise situations and eliminate or reduce the risk to health and safety from noise at work.

Specific requirements within the Code of Practice include:

- Identify hazards and necessary protections from noise in the workplace via risk assessments;
- Eliminate or reduce noise levels that could damage hearing;
- Give workers and others appropriate hearing protection for the levels of noise and risk;
- Make sure hearing protection and other controls are properly used;
- Give information, regular and full training to workers and others;
- Monitor noise levels – keep them below legal and recommended limits
- Carry out health surveillance where there are risks; and
- Check regularly-including spot checks - for any changes which could affect noise exposures and risks
- Set a good example with all managers and supervisors wearing hearing protection at all times when in hearing protection zones.

PROTECT YOUR HEARING

HOW DO I KNOW IF MY WORKPLACE IS NOISY?

If any of the following apply, you may have an issue with noise in your workplace and should consider taking further action:

- The noise is intrusive – like a busy street, a vacuum cleaner or a crowded restaurant – or worse, for most of the working day;
- You have to raise your voice to have a normal conversation when about 2 m apart, for at least part of the day;
- You use noisy powered tools or machinery for over half an hour a day;
- The type of work is known to have noisy tasks, e.g. construction, demolition or road repair; woodworking; plastics processing; engineering; textile manufacture; general fabrication; forging or stamping; paper or board making; canning or bottling; foundries; waste and recycling;
- There is noise because of impact (such as hammering, drop forging, pneumatic impact tools etc), explosive sources such as cartridge-operated tools or detonators, or guns.
- You may also have to consider other issues in relation to noise such as:
  - You use warning sounds to alert people to dangerous situations
  - The work people do relies on verbal communication to pass on instructions
  - A lot of mobile machinery or traffic is present within the workplace

NOISE RISK ASSESSMENT

If you have answered yes to any of the points above then it is likely that you have a problem with noise in your workplace and should consider further action.

One of the first steps that all employers should undertake is to carry out a suitable and sufficient risk assessment. *OSHAD-SF – Element 2 – Risk Management* sets out the principles that each risk assessment should follow, along with the hierarchy of control when identifying measures to eliminate or reduce the risk.

A risk assessment for noise is not just as simple as taking some basic noise measurements around the workplace, in fact you may not even need to take noise measurements. The aim of the risk assessment is to help you decide what you need to do to ensure the health and safety of your workers who are exposed to noise.

PROTECT YOUR HEARING

NOISE RISK ASSESSMENT

Your risk assessment should:

- Identify where there may be a risk from noise and who is likely to be affected;
- Contain a reliable estimate of your workers' exposures, and compare the exposure with the exposure action values and limit values;
- Identify what you need to do to comply with the law, e.g. whether noise-control measures or hearing protection are needed, and, if so, where and what type; and
- Identify any workers who need to be provided with health surveillance and whether any are at particular risk.

As with all risk assessments you must record your findings and also any actions that you have decided upon to eliminate or reduce the risk from noise.

It is important, when undertaking a risk assessment that you consult with your staff during the assessment to ensure you have captured any concerns or issues that they have. You may not be aware of problems they encounter whilst undertaking their jobs. This information can be vital when assessing the risk within your workplace.

You must also ensure that your risk assessment is kept up to date, it should be reviewed if changes happen within the workplace or it is no longer valid. As a minimum it should be reviewed annually.

As with all risk assessments you need to ensure it is undertaken by a competent person. You may have people within your organization who are competent in some or all areas; however you may choose to utilize the service of an external expert.

CALCULATING NOISE EXPOSURE LEVELS

OSHAD-SF – CoP 3.0 – Occupational Noise requires employers to make an assessment of the personal daily exposure to noise.

Daily personal noise exposure, or LEP,d, represents a daily noise 'dose' – a combination of 'how loud' and 'how long exposed' for the various noises that a person is exposed to in a working day.

You also need to determine the likely peak sound pressure levels, LCpeak, to which workers are exposed.

This means thinking about:

- What work is done or likely to be done;
- The ways in which the work may be done; and
- How the work might vary from one day to the next.

It may be possible for you to estimate the LEP,d or the LCpeak for some or all of your workers from published information / International Best Practice, such as HSE industry-specific guidance.

Noise level information may come from other sources, such as:

- Measurements in your own workplace;
- Other workplaces similar to yours; and
- Data from suppliers of machinery.

Do not make any allowance for the wearing of personal hearing protection when you estimate workers' noise exposure levels.

Personal noise exposure may also be calculated over a week rather than a day, if the noise exposure of workers varies markedly from day to day.

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NOISE ACTION LEVELS

UAE Labour Law requires employers to “Prevent or reduce noise and vibrations that are hazardous to the health of the worker according to the practically permitted levels”, and does not specify certain levels. These numbers are based on (NIOSH) and they are the same figures mentioned in the standards policy under the law.

مستوى التعرض	الفترة الزمنية			مستوى التعرض	الفترة الزمنية		
Exposure Level, L	Duration, T			Exposure Level, L	Duration, T		
(dBA)	Hours	Minutes	Seconds	(dBA)	Hours	Minutes	Seconds
80	24	-	-	106	-	3	45
81	20	10	-	107	-	2	59
82	16	-	-	108	-	2	22
83	12	42	-	109	-	1	53
84	10	5	-	110	-	1	29
85	8	-	-	111	-	1	11
86	6	21	-	112	-	-	56
87	5	2	-	113	-	-	45
88	4	-	-	114	-	-	35
89	3	10	-	115	-	-	28
90	2	31	-	116	-	-	22
91	1	-	-	117	-	-	18
92	1	35	-	118	-	-	14
93	1	16	-	119	-	-	11
94	-	-	-	120	-	-	9
95	-	47	37	121	-	-	7
96	-	37	48	122	-	-	6
97	-	30	-	123	-	-	4
98	-	23	49	124	-	-	3
99	-	18	59	125	-	-	3
100	-	15	-	126	-	-	2
101	-	11	54	127	-	-	1
102	-	9	27	128	-	-	1
103	-	7	30	129	-	-	1
104	-	5	57	130 - 140	-	-	<1
105	-	4	43	-	-	-	-

You need to check the assessments you have already made against the action levels above to determine what specific actions are required within the workplace to reduce the noise levels to an acceptable level.

CONTROLLING NOISE

Controlling the risk of noise does not start with the issue of hearing protection. As with all control measures to reduce risk you first need to look at how you can eliminate the hazard prior to looking at ways of controlling this.

Look at the process you use, are there alternatives available within industry that are quieter, examine the equipment you use and or the work methods you use. Can you shorten the exposure times of your staff, can they work for shorter periods around the high noise levels?

You should also keep up to date with what is good practice or the standard for noise-control within your industry, e.g. through your manufacturers association, or machinery or equipment suppliers.

There are many specific actions that can be introduced to the workplace to reduce noise and often a combination of methods works best.

First think about how to remove the loud noise altogether. If that is not possible, do all you can to control the noise at source, consider redesigning the workplace and reorganising working patterns. Take measures to protect individual workers if you need to.

Consider the following:

- Use a different, quieter process or quieter equipment, eg:
  - Can you do the work in some other quieter way?
  - Can you replace whatever is causing the noise with something that is less noisy?
  - Introduce a low-noise purchasing policy for machinery and equipment.

PROTECT YOUR HEARING

Consider the following: *(Continued)*

- Introduce engineering controls:
  - Avoid metal-on-metal impacts, eg line chutes with abrasion-resistant rubber, and reduce drop heights.
  - Vibrating machine panels can be a source of noise - add material to reduce vibration ('damping').
  - Isolate vibrating machinery or components from their surroundings, eg with antivibration mounts or flexible couplings.
  - Fit silencers to air exhausts and blowing nozzles.
- Modify the paths by which the noise travels through the air to the people exposed, eg:
  - Erect enclosures around machines to reduce the amount of noise emitted into the workplace or environment.
  - Use barriers and screens to block the direct path of sound.
  - Position noise sources further away from workers.
- Design and lay out the workplace for low noise emission, eg:
  - Use absorptive materials within the building to reduce reflected sound, eg open cell foam or mineral wool.
  - Keep noisy machinery and processes away from quieter areas.
  - Design the workflow to keep noisy machinery out of areas where people spend most of their time.

Maintenance of machinery is especially important for controlling noise. Poorly maintained plant and machinery is likely to produce more noise than a machine that is well maintained and in good working order.

Where your workers are likely to be exposed at or above the exposure action level, you must implement a hearing conservation program within the workplace.

HEARING CONSERVATION PROGRAM

In workplaces where there is a high risk of noise exposure, employers must put in place a continuous, effective hearing conservation program.

A 'high risk' is where a risk assessment has identified noise exposure levels equal to or exceeding 85dB(A), measured before using hearing protection equipment.

UAE Labour Law requires employers to "Prevent or reduce noise and vibrations that are hazardous to the health of the worker according to the practically permitted levels", and does not specify certain levels. These numbers are based on (NIOSH) and they are the same figures mentioned in the standards policy under the law.

Hearing conservation plans include:

Monitoring noise exposure

- Develop and implement a monitoring and sampling strategy to assess workers' exposures, by a competent person;
- Identifying workers to be included in the program, and the hearing protections needed; and
- Use of calibrated measurement instruments – measuring all sound levels from 80dB(A) to 130dB(A).

Worker notification – if they are exposed at, or above an 8-hour timeweighted value of 85dB(A), in a language and method understandable to them.

Audiometric testing program

- By qualified audiologists, using regularly calibrated equipment,
- Free testing available to all workers at risk (85dB(A) and above/8-hour timeweighted; and
- Baseline audiograms and annual audiograms with evaluation and notification to workers.

PROTECT YOUR HEARING

Follow up procedures – revised equipment and protections, further testing.

Hearing protection

- For all workers in risk areas – specifying risk areas where protection must be worn.
- Full training for workers and ensuring good fit.
- Appropriate 'attenuation' of hearing protection equipment to handle the sound level and bring noise down below 85dB(A).
- Protectors which reduce noise to safe levels without causing a sense of isolation or reducing awareness.

Provide Noise Hazard Signage – warning signs in work areas where noise levels exceed limits.

Audiometric measuring equipment - sound level meters or dosimeters used for measuring sound pressure levels.

SIGNAGE

Under the requirements of *OSHAD-SF – CoP 17.0 Safety Signs and Signals,* you must ensure that the appropriate signage is in place where there is a risk to the safety and health of your workers or other persons. Any area within your workplace which has been identified as high risk must have signage erected to warn anyone who enters of the hazards and also the need to wear hearing protection.

HEARING PROTECTION

The use of hearing protection should always be seen as the last line of defence against noise as with all PPE. When issuing hearing protection you also need to consider if any additional hazards have been introduced to the workplace, this could include reduced ability to hear warning signals or instructions. You should revisit the risk assessment for the activity to ensure that it is up to date and incorporates the use of the selected PPE.

When selecting PPE there are a number of factors that you need to consider:

- Choose a suitable protection factor – sufficient to eliminate risks from noise but not so much protection that wearers become isolated;
- Consider the work and working environment, eg physical activity, comfort and hygiene;
- Compatibility with other protective equipment, eg hard hats, masks and eye protection.
- You should only supply hearing protectors with accredited specifications.

When you are selecting hearing protection, ensure that you consult with a selection of your workers and allow them to take part in this process. This will help ensure that the type of protection chosen is suitable but also as your own staff have helped choose this they are more likely to wear it.

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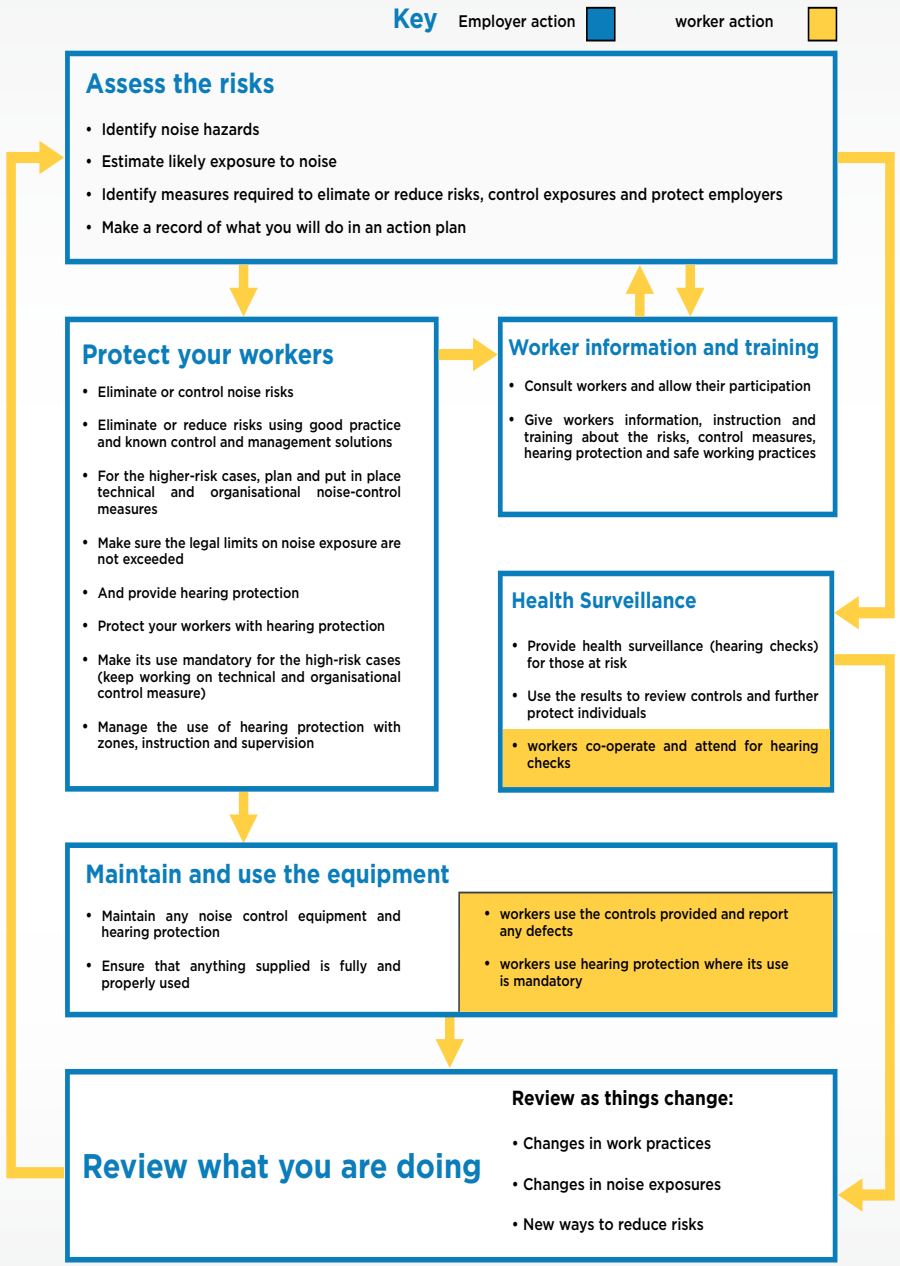
INFORMATION AND TRAINING

As with any procedure in the workplace, you must provide your workers with information and training on the correct process and to ensure they are aware of the hazards and risks.

As a minimum the training programs should include the following information:

- The likely noise exposure and the risk to hearing this noise creates;
- What you are doing to control risks and exposures;
- Where and how people can obtain hearing protection;
- How to report defects in hearing protection and noise-control equipment
- What their duties are under the *OSHAD – CoP 3.0*;
- What they should do to minimise the risk, such as the proper way to use hearing protection and other noise-control equipment, how to look after it and store it, and where to use it;
- Your health surveillance systems.

MANAGING NOISE RISKS



PROTECT YOUR HEARING

المختبر المرجعي الوطني
National Reference Laboratory
Managed by LabCorp
A Mubadala Company

Noise Protection

NRL has a policy to protect personnel from excessive noise levels.

Click the below link to open the policy

http://10.90.97.57/QPulseDocumentService/Documents.svc/documents/active/attachment?number=NRL-OHS-SOP-052

NOTE: The laboratory should provide protection against the effects of noise exposure when sound levels equal or exceed an 8-hour time-weighted average sound level of 85 decibels. The laboratory should monitor noise exposure if there is an indication that excessive noise levels are present (for example, when noise levels exceed 85 decibels, people have to shout to be heard).

Accreditation Standards

- CAP GEN.77300
- ISO 15189: 2012: 5.2.2 Laboratory and office facilities
- OSHAD: CoP 3.0 Occupational noise

Points to remember

- Acceptance level of 8-hour time-weighted average sound level is less than 85 decibels
- The laboratory should monitor noise exposure if there is an indication that excessive noise levels are present. When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, NRL must develop and implement a monitoring program.
- Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.
- The sampling strategy shall be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors.
- Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:
- Additional employees may be exposed at or above the action level; or
- The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements.
- NRL must establish and maintain an audiometric testing program by making audiometric testing available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels. The program shall be provided at no cost to employees.
- Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician.
- Within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared.

Additional Details

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9735&p_table=STANDARDS