

Noise at Work



Safer Business - Better Health

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Introduction

What are the legal duties for employers?

There is a general duty on employers to ensure that risks from noise are eliminated where reasonably practicable or reduced to as low as reasonably practicable, but where exposure is less than the lower exposure action values little action is expected.

Where risks of exposure are likely to be above the upper action values employers are expected to:

- Establish and implement a program of organisation and technical control measures, excluding personal hearing protection
- Reduce exposure to as low as reasonably practicable
- Ensure exposure is below the limit values.

By carrying out a risk assessment employers should be able to:

- Understand the work that is being undertaken
- Establish noise exposure and assess risk to health by comparing to action values set in regulations a reliable estimate, and assume there is a risk to be managed where the situation is clear, or known control measures not being applied

- Consider safety risks due to noise
- Are risks as low as reasonable practicable, or should more be done?
- Plan action to ensure risks are as low as reasonably practicable.

Employers need to produce an action plan for control by:

- Identifying what is possible to reduce exposure, e.g. Consider alternative processes, equipment, working methods
- Identify good practice and industry standards in controlling noise risks
- Decide how much reduction is possible, how many people are affected, what is reasonably practicable
- Establish priorities and timetable (immediate, short, medium, long term)
- Assign responsibilities to individuals
- Ensure actions are carried out
- Check it has been & will continue to be effective

Cont'd

What are the legal duties for employers? (cont'd)

- Follow general principles of prevention in accordance with the Management Regulations.

non-work activities, or making an informed choice to go to noisy places

The Regulations do not apply to:

- Members of the public exposed to noise from their

- Low level noise that is a nuisance but causes no risk of hearing damage.

How do I know if my business has a noise problem?

This will depend on how loud the noise is and how long people are exposed to it. As a simple guide you will probably need to do something about the noise if any of the following apply:

- Is the noise intrusive - like a busy street, a vacuum cleaner or a crowded restaurant - for most of the working day?

- Do your employees have to raise their voices to carry out a normal conversation when about 2metres apart for at least part of the day?
- Do your employees use noisy powered tools or machinery for more than half an hour each day?
- Do you work in noisy industry?

What businesses could have noise problems?

Workplace	Activity	Workers affected
Pubs, bars, nightclubs	Band playing loud music DJ playing loud music through PA system Karaoke performance too loud	Bar staff, kitchen staff glass collector, security staff
Performing arts venues	Sound level too high during rehearsal and performance	Performers, house staff, other support staff
Concert halls and theatres	Band, orchestra, music group playing loudly during rehearsals and performances Recorded music too loud	Producers, directors, venue staff, performers, performers technical support staff, other staff providing services, e.g. security, ambulance or police, ushers, catering staff
Outdoor concert venues	Band, orchestra, music group playing loudly Loud special effects, e.g. fireworks	
Cafes and restaurants	Recorded music played loudly Live group playing loudly	Catering staff, bar staff, kitchen staff, waiting staff
Education establishments	Musical groups, performers, playing loudly during practice & lessons	Teachers, band members, other staff
Sound recording studios	Sound levels too high during recording sessions in studio	Sound engineer, producers, performers, directors

How do I get started?

You will need to assess the risks to decide whether any further action is needed, and plan how you will do it.

The aim of the assessment is to help you decide what you need to do to ensure the health and safety of your employees who are exposed to noise. It is more than just taking measurements of noise - sometimes measurements may not even be necessary.

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 employees' exposures, and compare the exposure with the exposure action values and limit values;
- identify what you need to do to comply with the law, for example, whether noise control measures or hearing protection are needed, and, if so where and what type; and
- identify any employees who need to be provided with health surveillance and whether any are at particular risk.

What are the action levels and limit values?

The Noise Regulations require you to take specific action at certain action values. These relate to the levels of exposure to noise of your employees averaged over a working day or week; and the maximum noise (peak sound pressure) to which employees are exposed in a working day.

The values are:

- lower exposure action values: daily or weekly exposure of 80dB peak sound pressure of 135db This is the assumed risk threshold for hearing damage

- upper exposure action values: daily or weekly exposure of 85dB peak sound pressure of 137dB At these levels the risk of hearing damage becomes significant

There are also levels of noise exposure which must not be exceeded. These are called exposure limit values:

- daily or weekly exposure of 87dB
- peak sound pressure of 140dB
- Compliance with these limits can be achieved with personal hearing protection

How do I measure my employees' exposure?

This can be done just by estimating, however it is essential that you can show that your estimate of employees exposure is representative of the work that they do.

It needs to take account of:

- the work they do or are likely to do;
- the ways in which they do the work; and
- how it might vary from one day to the next.

Your estimate must be based on reliable information, for example, measurements in your own workplace, information from other workplaces similar to yours, or data from suppliers of machinery. To aid employers in estimating employees noise exposure the HSE have produced guidelines of the noise levels that positions may be exposed to:

How do I measure my employees' exposure?
(cont'd)

Pubs, clubs, nightclubs

Task/occupation	Typical Lep,d (dB)
DJ	93 - 99
Bar staff	89 - 99
Floor staff	90 - 100
Security	96

Music 'events'

Task/occupation	Typical Lep,d (dB)
Catering staff	87 - 91
Merchandising	85 - 99
St John Ambulance	88 - 94
Pit security / supervisor	100
Other security	90 - 99
Stage technicians / managers	94 - 100
Fire Officer	100

Musicians - Classical rehearsal

Task/occupation	Typical Lep,d (dB)
Trumpet	89
Clarinet	88
Violin	85
Viola	84
Cello	89

You must record the findings of your risk assessment. You need to record in an action plan anything you identify as being necessary to comply with the law, setting out what you have done and what you are going to do, with a timetable and saying who will be responsible for the work.

Review your risk assessment if circumstances in your workplace change and affect noise exposures. Also review the assessment regularly to make sure that you continue to do all that is reasonably practicable to control the noise risks. Even if it appears that nothing has changed, you should not leave it for more than about two years without checking whether a review is needed.

Competence

You need to make sure that your risk assessment:

- has been drawn up by someone who is competent to carry out the task; and
- is based on advice and information from people who are competent to provide it.

You, or people within your company, may well be competent in some or all areas. You may, however, choose or need to go to external consultants

Practical strategies for noise control

Discussed below are possible, practical controls that it is strongly recommended that a business considers when investigating ways of reducing their noise exposure.

- **Reduction of Volume**

This is a simple, quick control. Ask yourself is it really necessary to have the music that loud. Balance the volume between public expectation and risk to employees hearing.

- **Screening**

Screens, barriers or walls can be placed between the source of the noise and the people to stop or reduce the direct sound. Barriers should be constructed from a dense material, e.g. brick or sheet steel, although chipboard and plasterboard can be used. In terms of the entertainment industry is it possible placing the bar in a separate room?

- **Damping (Acoustic Absorption)**

This involves adding material to reduce the vibrations. By placing sound absorbing materials between the speakers and their stands can reduce the amount of noise vibration, possibly reducing the noise produced and making it clearer to members of the public.

- **Layout and Design**

When considering a new workplace or modifying an existing one, noise emissions and noise exposure can be

limited by careful choice of design, layout and the construction materials used for the building, e.g. focus speakers towards the dance floor, place quieter speakers around the surrounding areas including the bar, use damping materials behind the bar - in the ceiling etc.

- **Job Rotation**

Where some employees do noisy jobs all day, and others to quieter ones, consider introducing job rotation. This might need you to train employees to carry out other jobs.

You should be aware that this system will reduce the noise exposure of some employees while increasing that of others, so care and judgement is needed.

In addition, employees will need to be rotated away from noisy jobs for a proportion of time to make appreciable difference to their daily exposure. This is because daily exposure is dominated by time in noisy areas.

- **Maintenance of Equipment**

Equipment maintenance can be critical in reducing noise. Equipment deteriorates with age and use, and if not maintained are likely to produce more noise due to work parts etc. Maintenance can, if carried out periodically, limit the increased noise emission due to wear.

I've heard I have to provide personal hearing protection is this correct?

As a first resort employers need to identify risks that cannot be immediately tackled. Hearing protection must not be seen as the only resort; employers have a legal duty to reduce exposure to what is as low as reasonably practicable.

Hearing protection must be supplied, when it is requested by employees where the threshold exceeds an $L_{ep,d} > 80\text{dB}$.

Hearing protection must be supplied and employers must ensure it is used properly where risks are significant ($L_{ep,d} > 85\text{dB}$), or where high noise areas/tasks identified as hearing protection zones.

Employers have to ensure that if they provide hearing protection it must be suitable and:

- Selected so as to ensure the daily exposure will be at least below upper exposure action values
- Not provide too much protection (can lead to isolation/safety risks, or unwillingness to wear)
- Suited to the individual (employees offered a choice)
- Ensure that it is worn fully and properly through policies, procedures, supervision and information, instruction and training.

Are there any health effects to being exposed to loud noise?

Noise has been described as unwanted sound, which may be distracting, annoying or cause physical damage to the body (e.g. temporary or permanent hearing damage).

Noise at work can cause hearing loss that can be temporary or permanent. People often experience temporary deafness after leaving a noisy place.

Although hearing recovers within a few hours, this should not be ignored. It is a sign that if you continue to be exposed to the noise your hearing could be permanently damaged.

Permanent hearing damage can also be caused immediately by sudden, extremely loud, explosive noises, for example from guns or cartridge-operated machines.

Hearing loss is usually gradual because of prolonged exposure to noise. It may only be when damage caused by noise over the years combines with hearing loss

due to ageing that people realize how deaf they have become. This may mean their family complains about the televisions being too loud, they cannot keep up with conversations in a group, or they have trouble using the telephone. Eventually everything becomes muffled and people find it difficult to catch sounds like 't', 'd' and 's', so they confuse similar words.

Hearing loss is not the only problem. People may develop tinnitus (ringing, whistling, buzzing or humming in the ears), a distressing condition which can lead to disturbed sleep.

Noise induced hearing loss is often cumulative and not immediately obvious, so its threat is seldom recognized or taken seriously. Whilst the effects of noise are irreversible, noise induced hearing loss is totally preventable.

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Are there any health effects to being exposed to loud noise? (cont'd)

Jack Ashley, (Acts of Defiance, Reinhardt Books, 1992), describes perfectly the effects of deafness:

'The main deprivation of deafness is not, as many imagine, the loss of music and birdsong, sad though that is, but the severing of easy communication. It is the end of the radio, the emptiness of television, the difficulty of small-talk, the absence of conversational nuances, and the lack of company

which mark the mind. Deafness separates humans from humankind.'

Old age automatically brings about a reduction in hearing, however an employee who has been exposed to an average noise level of 88dB throughout their work life has a 100% chance of a reduction of 25dB hearing level by the time they are 60.

Remember: Young people can be damaged as easily as the old

Is it true that I have to organise health surveillance for employees?

Regulation 9 of The Control of Noise at Work Regulations 2005 states that 'if the risk assessment indicates that there is a risk to the health of their employees who are, or are liable to be, exposed to noise, the employer shall ensure that such employees are placed under suitable health surveillance, which shall include testing of the hearing'.

Health surveillance is a programme of systematic health checks to identify early signs and symptoms of work-related ill health and to allow action to be taken to prevent its progression. Suitable health surveillance usually means regular hearing checks (audiometric testing).

As a baseline checks should be carried out annually for 2 years and then every 3 years. The business must ensure that there are arrangements in place for:

- Keeping of health records
- Referral on identification of hearing damage
- Informing employees (fitness for work, not medical-in-confidence information unless the employee agrees)

There is strong evidence to show that regular exposure above the upper exposure action values can pose a risk to health, you should therefore provide health surveillance to workers regularly exposed above the upper exposure action value.

Where exposure is between the lower and upper exposure action values, or where employees are only occasionally exposed above the upper exposure action values, you should provide health surveillance if you find out that an individual may be particularly sensitive to noise.

This may be from past medical history, audiometric test results from previous jobs, other independent assessments or a history of exposure to noise levels exceeding the upper exposure action values. A few individuals may also indicate a family history of becoming deaf early on in life.