

Control of Noise at Work

Introduction

The human ear is capable of responding to a wide range of noise levels from low frequencies (i.e. notes) up to very high frequencies. This capability will be reduced with:

- Age
- Exposure to unacceptably high levels of noise for long enough periods.

This information sheet aims to give you an understanding of the main issues associated with controlling noise in the workplace.

What are the effects?

In simple terms there are two effects noise can have:

1. Short term decrease in hearing, from which you make a full recovery. For example, life sounds quieter when you leave a room where loud music has been played, but you are back to normal in the morning.
2. Permanent decrease in hearing – this is the greatest concern!

What causes permanent loss?

Hearing loss is caused by the combination of noise level and the time we are exposed to that noise. Up to a certain level, we can cope with high levels of noise for a short period. On the other hand, lower levels of noise for long periods may be more harmful.

How can it be prevented?

Hearing loss can be prevented by:

- Reduction of the level of noise at source
- Use of hearing protection
- Reduction of the time exposed to the noise.



It is important to realise that the best prevention route is to reduce or contain the noise where it is being generated, rather than by the other two steps.

What you must do:

Where devices have been supplied to contain the noise at source, (acoustic hoods, booths, etc.) you must use these controls.

When the hearing protection signs are displayed, you must wear hearing protection.

What can, or must, the employer do?

The employer must take all reasonably practical measures to reduce noise. Where there is reason to suspect that noise levels are above 80 dB(A), the employer must carry out an assessment. If this shows that the LEP,d is above 80 dB(A), then hearing protection, information and advice to those who may be affected must be provided. Council policy is that this protection must be worn.

Noise and how it is Measured

Because we can hear such a large range of sound levels, sound is measured by a logarithmic scale called decibels or dB for short. The human ear responds in different ways to different frequencies, so sound levels are normally adjusted to mimic the ear's response. This is then called dB(A).

Examples of Some Common Noises dB(A)

- Library 35
- Office 65
- Street traffic 85
- Pneumatic road drill 100

Because of this logarithmic scale, a change of 3dB(A) means either a doubling or halving of the noise level. Therefore, a change from 86 dB(A) to 83 dB(A) doesn't seem much but the noise is actually half what it was. Were we to lower it to 80 dB(A) then it would be a quarter of the level at 86 dB(A).



What are the problem levels?

Problems occur with unacceptable combination of noise level and time. This combination is called a daily personal noise exposure or "dose" and is given the term LEP,d. An LEP,d of 85 means that the noise dose is the same as that from a constant 85 dB(A) for 8 hours.

If you know the noise level and duration, you can look up the LEP,d in a chart. For example, 4 hours at 88 dB(A) gives an LEP,d of 86 dB(A). In other words, 4 hours at 88 dB(A) has the same effect on you as 86 dB(A) for 8 hours. When it comes to durations at different levels, you cannot simply average the readings. So 4 hours at 85 dB(A) and 4 hours at 75 dB(A) is not the same as 80 dB(A) for 8 hours. We have to use calculations or charts to work this out.

The Control of Noise at Work Regulations identifies noise doses of 80 dB(A) and 85 dB(A) as action points.

Legal Requirements

The Control of Noise at Work Regulations 2005 lists a number of obligations:

- The employer must take reasonably practical steps to control risk
- The employee must co-operate with the employer with regard to these steps,
- Nobody shall intentionally or recklessly interfere with anything which the employer has provided to control risks.
- Control risks at source or by using engineered controls, the use of Personal Protective equipment is generally considered the last resort in noise control



Hearing protection can take the form of ear muffs (shown left) which fit over the ear or plugs (shown right) which fit in the ear. When properly fitted, the protection of plugs is better but the main criterion is personal preference.

Hearing protection is available through your supervisor. Follow these simple rules:

- Do not wear ear muffs if you have long hair covering the ears, thick framed glasses or large ear-rings. These reduce the effectiveness of the protection.
- Ensure that ear plugs fit snugly in the ear and do not leave gaps. Mould them to your ear, if possible.
- For hygiene reasons, do not share hearing protection.
- Report defects in hearing protectors to your supervisor.

As a principal guide, if you have to raise your voice to have a conversation with someone who is around 2 metres away then it may be necessary to have a noise assessment carried out. You should discuss this, other noise related concerns, with your line manager as soon as you can.

Other Resources

Online training in Noise Awareness
AS12 – Control of Workplace Noise.