

Noise at work

A brief guide to controlling the risks



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Introduction

What is this leaflet about?

Loud noise at work can damage people's hearing and lead to risks to safety. This leaflet explains what you, as an employer, need to do under the Control of Noise at Work Regulations 2005 to protect your employees from noise. It will also be useful to employees and their representatives.

This leaflet tells you about:

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

What harm can noise cause?

Hearing damage

Noise at work can cause hearing damage that is **permanent** and **disabling**. This can be hearing loss that is gradual because of exposure to noise over time, but also damage caused by sudden, extremely loud noises. The damage is disabling as it can stop people being able to understand speech, keep up with conversations or use the telephone.

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.

Safety issues

Noise at work can interfere with communications and make warnings harder to hear. It can also reduce people's awareness of their surroundings. These issues can lead to safety risks – putting people at risk of injury or death.

The law

The Control of Noise at Work Regulations 2005 (the 'Noise Regulations') require you to eliminate or reduce risks to health and safety from noise at work.

Depending on the level of risk, you should:

- take action to reduce the noise exposure; and also
- provide your employees with personal hearing protection.

Other duties under the Regulations include the need to:

- make sure the legal limits on noise exposure are not exceeded;
- maintain and ensure the use of equipment you provide to control noise risks;
- provide your employees with information, instruction and training; and
- carry out health surveillance (monitor workers' hearing ability).

The Regulations apply where work activities expose people at work (your employees or other workers affected by your work activities) to risks to their health and safety from noise.

The Regulations do not apply where people who are not at work are exposed to risks to their health and safety from noise related to work activities; however, the general duties of section 3 of the Health and Safety at Work etc Act 1974 may apply in such cases.

Do I have a noise problem in my workplace?

You will probably need to do something about the noise if any of the following apply:

- the noise is intrusive – for example, as noisy as a busy road, a vacuum cleaner or a crowded restaurant – or worse than intrusive, for most of the working day;
- your employees have to raise their voices to carry out a normal conversation when about 2 m apart for at least part of the day;
- your employees use noisy powered tools or machinery for more than half an hour each day;
- your sector is one known to have noisy tasks, eg 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 are noises due to impacts (such as hammering, drop forging, pneumatic impact tools etc), explosive sources such as cartridge-operated tools or detonators, or guns.

Situations where you will need to consider safety issues in relation to noise include where:

- you use warning sounds to avoid or alert to dangerous situations;
- working practices rely on verbal communications;
- there is work around mobile machinery or traffic.

Decide what action is needed

If any of the statements in the previous section apply, it is likely you will need to take some further action. You should carry out a risk assessment to decide what action is needed, and develop a plan.

A risk assessment means more than just taking measurements of noise – 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, include:
 - risks to health; and
 - risks to safety;
- contain an estimate of your employees' exposures to noise (see 'Noise exposure levels');
- identify what you need to do to comply with the law, eg whether noise-control measures and/or personal hearing protection are needed, or whether working practices are safe; and
- identify any employees who need to be provided with health surveillance and whether any are at particular risk.

You must record the findings of your risk assessment. You must also record the action you have taken, or intend to take, to comply with the law.

You should review your risk assessment if circumstances change or if it is no longer valid, for example if the work changes and this affects workers' noise exposure, or there are changes to the availability, applicability or cost of noise-control measures. You should not leave it for more than about two years without checking whether a review is needed.

Noise exposure levels

Estimating noise exposure

You are required to make a reliable, representative estimate of your workers' daily personal noise exposure. Daily personal noise exposure, or $L_{EP,d}$, 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, L_{Cpeak} , 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 $L_{EP,d}$ or the L_{Cpeak} for some or all of your workers from published information, 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. This is written as $L_{EP,w}$. Noise exposure calculators are available on the HSE website.

Exposure action values

The Noise Regulations define 'exposure action values' – levels of noise exposure which, if exceeded, require you to take specific action. There are 'lower' and 'upper' action values.

You need to compare your estimated noise exposure with the action values to know what specific actions are required of you in addition to your general duty to reduce risks from noise.

	Lower exposure action value (decibels)	Upper exposure action value (decibels)
Daily or weekly personal noise exposure ($L_{EP,d}$ or $L_{EP,w}$)	80	85
Peak sound pressure (L_{Cpeak})	135	137

Take action – control the risks

When is action required?

Wherever there is noise at work you should be looking for alternative processes, equipment and/or working methods which would make the work quieter or mean people are exposed for shorter times. You should also keep up with what is good practice or the standard for noise-control within your industry, eg through your trade association, or machinery or equipment suppliers.

Where your employees are likely to be exposed at or above the upper exposure action values, you must take action to reduce noise exposure with a planned programme of noise control.

Even where noise exposures are below upper exposure action values, you should take action to reduce the risks, eg reducing exposure further.

Any action you take should be 'reasonably practicable' – in proportion to the level of risk. If exposure is below lower action values, the risk is low and it is likely no action is required – but if there are simple, inexpensive practical steps that would reduce risks further, you should consider implementing them.

How can I control noise?

There are many ways of reducing noise and noise exposure. It is within the capabilities of nearly all businesses to decide on practical, cost-effective actions to control noise risks, if necessary by looking at the advice available (eg the HSE website).

First think about how to remove the source of noise altogether – for example, housing a noisy machine where it cannot be heard by workers. If that is not possible, investigate:

- using quieter equipment or a different, quieter process;
- engineering/technical controls to reduce, at source, the noise produced by a machine or process;
- using screens, barriers, enclosures and absorbent materials to reduce the noise on its path to the people exposed;
- designing and laying out the workplace to create quiet workstations;
- improved working techniques to reduce noise levels;
- limiting the time people spend in noisy areas.

Measures that give ongoing or medium- and long-term benefits, and would be expected to be part of your noise-control programme, are:

- a low-noise purchasing policy for machinery and equipment;
- proper and regular maintenance of machinery and equipment that takes account of noise.

Where your noise-control measures require actions from employees to be effective (eg making proper use of noise enclosures or following approved low-noise working methods), you should make sure employees do what is required. Make sure that employees have appropriate information, instruction and training, and ensure appropriate supervision. Employees have a duty to make use of any noise-control measures you provide.

Plan for maintenance

You have a duty to maintain anything you provide that is intended to control noise. You should put in place a system to ensure that noise-control equipment is maintained so that it continues to be effective. This can be incorporated into your systems for routine and reactive maintenance. The effectiveness of many noise-control measures can be significantly reduced even though the level of disrepair seems minor.

Choose quieter equipment and machinery

When hiring or buying equipment you should consider noise alongside other factors (eg general suitability, efficiency). Compare the noise data from different machines as this will help you to buy from among the quieter ones.

Manufacturers of work equipment have legal duties regarding the equipment they supply (see 'Duties of machine manufacturers on noise') and you have a duty under the Provision and Use of Work Equipment Regulations 1998 to only provide your workers with equipment that meets relevant supply laws.

When using a manufacturer's noise data you will need to make sure that the data is representative of the way you intend to use the equipment. Be cautious when using manufacturers' data other than for comparing equipment; for example, the data is likely only to be a guide to personal noise exposure as many factors affect the noise levels experienced by employees.

You should ask your supplier about:

- installation arrangements, eg methods of mounting and location, to ensure machinery operates as quietly as possible;
- how different ways of operating the machine affect the noise it produces;
- maintenance arrangements to ensure the machine continues to operate properly and does not get louder over time.

Duties of machine manufacturers on noise

Under the Health and Safety at Work etc Act 1974 and the Supply of Machinery (Safety) Regulations 2008 a supplier of machinery must:

- provide machinery that is safe and without risk to health, with the necessary information and instructions to ensure those aims can be met during installation, use and maintenance;
- design and construct machinery so that the noise produced is as low as possible;
- provide information about the noise the machinery produces, including descriptions of the operating conditions under which the noise was measured.

Safety risks

Where warning sounds are used to avoid or alert to dangerous situations, they should be selected to be clearly audible in the environment in which they are used, taking account of the hearing ability of the people involved and any use of personal hearing protection.

Systems of work where safety relies on verbal communications should be avoided where levels of noise or wearing hearing protection could lead to misunderstandings.

Where personal hearing protection is being used when working around mobile machinery or traffic, particular consideration should be given to the types of protector you supply and the ways in which you expect workers to make use of them.

Exposure limits

There are legal limits on the levels of noise to which workers may be exposed.

To comply with the exposure limits you must ensure that your workers' noise exposure, reduced by an appropriate factor if they are using personal hearing protection, is not above:

- 87 decibels for daily or weekly personal noise exposure ($L_{EP,d}$ or $L_{EP,w}$); and
- 140 decibels for peak sound pressure (L_{Cpeak}).

Complying with exposure limits is only one aspect of your legal duties under the Noise Regulations. It is separate from your duty to reduce risks from noise to as low as is reasonably practicable.

Personal hearing protection

When should personal hearing protection be used?

Hearing protection should be issued to employees:

- where extra protection is needed above what has been achieved using noise control;
- as a short-term measure while other methods of controlling noise are being developed.

You should not use hearing protection as an alternative to controlling noise by technical and organisational means.

Providing hearing protectors and managing their use

The Noise Regulations require you to:

- provide employees with hearing protectors and make sure they use them fully and properly when their noise exposure exceeds the upper exposure action values;
- provide employees with hearing protectors if they ask for them, and their noise exposure is between the lower and upper exposure action values;
- identify hearing protection zones – areas of the workplace where access is restricted, and where wearing hearing protection is compulsory.

To make sure protectors are worn fully (all of the time they are needed) and properly (fitted or inserted correctly) will require you to have systems of supervision and training. Also consider the use of spot checks and audits.

Selecting suitable hearing protectors

You should take account of the following in selecting the hearing protectors you provide to your workers:

- 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 CE-marked hearing protectors. You must consult with workers and their representatives over the types of protector provided.

Maintenance of hearing protectors

You have a duty to maintain hearing protection so that it works effectively. Factors that affect the level of protection, such as the headband tension and the condition of seals, should be checked as part of your system of maintenance.

Employees have a duty to report any defects in hearing protection. This duty should be explained to them, as well as how to identify defects, as part of their training.

Information, instruction and training

What do I need to tell my employees?

Employees should be provided with training so that they understand the risks they may be exposed to, and their duties and responsibilities. Where they are exposed above the lower exposure action values you should at least tell them:

- their likely noise exposure and the risk to hearing this creates;
- what you are doing to control risks and exposures;
- where and how to obtain hearing protection;
- how to identify and report defects in noise-control equipment and hearing protection;
- what their duties are under the Noise Regulations;
- what they should do to minimise the risk, such as the proper way to use noise-control equipment and hearing protection;
- your health surveillance systems.

You can give HSE's pocket card *Noise: Don't lose your hearing!* to your employees to supplement the training you give (see 'Find out more').

Employee and safety representatives

Consulting with trade union-appointed safety representatives or other employee representatives is a legal requirement. Discuss with them your risk assessment and plans to control risk, including any proposal to average exposure over a week, selection of hearing protection and your health surveillance programme.

Health surveillance

Providing health surveillance

You must provide health surveillance for all your employees who are likely to be frequently exposed above the upper exposure action values, or are at risk for any reason, eg they already suffer from hearing loss or are particularly sensitive to damage. Consult your trade union safety representative, or employee representative and the employees concerned before introducing health surveillance.

Health surveillance usually means regular hearing checks, conducted annually for the first two years of being exposed and then at three-yearly intervals (although this may need to be more frequent if a problem with hearing is detected or where the risk of hearing damage is high).

The hearing checks need to be carried out by someone who has the appropriate training. A suitable doctor, nurse or audiologist needs to review the results and ensure that employees with poor hearing or rapid hearing loss are referred for further medical advice.

You should receive results including information on an employee's fitness to continue working in noisy environments. However, you should only receive information on any hearing damage an individual employee has if that employee has given consent. You will also need to see anonymised, grouped health information, which should be made available to employee or safety representatives.

Where any hearing damage due to noise is identified you should prevent further harm to the individual, taking account of the medical advice you receive on fitness. On the basis of both individual and grouped information, you will need to consider what action you need to take; this should include reviewing your risk assessment, any control measures you have in place and your health surveillance procedures.

You will need to keep health records containing information on the outcomes of health surveillance and fitness for work. Health records must be kept separate from any confidential medical results.

Find out more

Noise: Don't lose your hearing! Pocket card INDG363(rev2) HSE Books 2012
www.hse.gov.uk/pubns/indg363.htm

www.hse.gov.uk/noise/index.htm

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at www.hse.gov.uk/pubns/indg362.htm.

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