# Backgound

Kent County Council (KCC) has a legal duty to protect the health and safety of staff and volunteers from all noise-related risks at work. We are required to reduce the risk of damage to employee’s hearing by carrying out risk assessments which identify who may be at risk from hearing damage, determine noise exposure levels and identify practical noise control measures which need to be put in place. Lowering noise exposure levels also has the potential to increase productivity where tasks and activities can be carried out at reduced noise levels.

**Scope**

This guidance applies to all employees and volunteers exposed to noise levels at work who may be at risk from hearing damage.

Whether we are talking to others, playing music, entertaining, driving our cars or other transport, using tools and machinery or just going about our daily business we all make noise.

Work related noise directly affects millions of workers in not only the most obvious industries such as manufacturing and construction but also in a wide range of other working environments where high numbers of people are present, noisy machinery or equipment is being used. Within KCC this can range from engineering, transport, workshops, landscaping, highways and education, amongst other service areas.

**Why, what and how**

Current legislation to protect employees came into force in April 2006. It brought a 5 decibels B(A) (dB(A)) reduction to the original noise action levels at which management precautions needed to be taken.

The reduction in exposure levels may not seem a big change, however it is because noise is measured on a logarithmic scale. This means that sound intensity can either be halved for every 3dB(A) it is decreased or doubled for every 3dB(A) it is increased. In practice the level of noise exposure will determine if an activity can be carried out or if a piece of equipment can be used and for how long.

This change in legislataton widens the number of KCC locations and range of activities, which managers will have to consider and assess.

This does not necessarily mean services/activities will have to cease or having to spend large amounts of money to control noise exposure. Should you find you have an issue with noise, then there are a number of practical ways to assess and manage these situations effectively.

**Frequently asked questions**

**What health risks are associated with being over exposed to excessive noise levels?**

Exposure to noise may pose a variety of health and safety risks to workers, which have been highlighted below:

* Noise-induced hearing loss (NIHL) is usually caused by prolonged exposure to loud noise. The first symptom is normally the inability to hear high-pitched sounds. Unless the problem of excessive noise is addressed, a person’s hearing will deteriorate further, including difficulties detecting lower-pitched sounds. The damage of noise-induced hearing loss is permanent.
* Hearing loss can occur without long-term exposures. Brief exposure to impulsive noises (even a single strong impulse) can have permanent effects.
* Tinnitus is a ringing, hissing or booming sensation in your ears. Excessive exposure to noise increases the risk of Tinnitus. If the noise is impulsive (e.g. blasting), the risk can rise substantially. Tinnitus can be the first sign that your hearing has been damaged by noise.
* Work-related stress: Occupational noise can be source of stress for workers e.g. the frequent ringing of a telephone or the persistent hum of an air-conditioning unit. Work-related stress rarely has a single cause, and usually arises from an interaction of several risk factors.
* Increased risk of accidents: High noise levels make it difficult for staff to hear and communicate, increasing the probability of accidents.
* Disturbance of speech/communication: Effective communication is essential in the workplace, whether it is a workshop, building site, call centre, or school.

Surrounding noise can cause a distraction, which could lead to a safety hazard, by interfering with communication, and making speech harder to hear which could lead to accidents. The impact of this will vary depending upon the work environment. For example:

* Surrounding noise may force teachers to raise their voices, leading to vocal problems.
* A verbal instruction may be misunderstood by a driver or mobile plant operator on a  
  construction/work site due to background noise, making it harder for workers to hear and correctly understand speech and signals.
* Masking the sound of approaching danger or warning signals (e.g. reversing signals on a lorry).

**What are the noise action levels and what do I have to do?**

An action level is a noise exposure level at which employers must take certain steps to reduce the harmful effects of noise to peoples hearing. There are two action levels:

* The first action is sets at an 8-hour average noise exposure level (or daily personal noise exposure level LEP,d) of 80dB(A) at which managers must provide information and training to employees and provide suitable hearing protection.
* The second action level sets at a daily personal exposure level (LEP,d) of 85dB(A), at which managers must take reasonably practicable measures to reduce exposure to noise, such as engineering controls or other technical measures. The use of hearing protection is mandatory if the noise cannot be controlled by these measures, or whilst practical measures are being planned or carried out.

The limit value of 87dB(A), or above is the level in which no employee can be exposed (taking hearing protection into account).

**What is noise?**

Noise can be decribed as an unwanted sound. Sounds and noise are an important part of everyday life and in small amounts they are harmless. Anyone who is exposed to noise is potentially at risk. The higher the noise level and the longer you are exposed to it, the more likely your chance of suffering harm from noise.

**How is noise measured?**

You will need to ask a competent person to determine whether you have a noise issue and if so, the levels of noise exposure for the individual(s) concerned. Noise intensity (‘loudness’) is measured in decibels (dB). To address the way the human ear responds to sound of different frequencies (pitches), an A-weighting is commonly applied. Noise measurements are therefore expressed in dB(A).

It is not just the intensity that determines whether noise is hazardous. How long you are exposed to noise is also very important. Noise levels and length of exposure are calculated during an assessment to provide a daily personal exposure limit (LEP,d). The daily personal exposure limit is how long you can carry out a certain activity or use a piece of equipment or work in a certain location, based on an 8-hour working day.

**Do I have a noise problem?**

To determine if you have a noise issue within your area of work will depend on how loud the noise is and how long people are exposed to it. As a simple guide you may have a problem if:

* you have to shout to be clearly heard by someone 2 metres away
* you, or your colleague’s ears are still ringing after leaving the workplace
* people use equipment which causes loud explosive noises such as cartridge operated tools
* how do I arrange for a noise assessment to be carried out?

**Noise assessment**

If you feel that any of the above relates to your work area then a noise assessment can be carried out. This would initially require noise readings to be taken by a competent person to determine if there is a potential or current noise issue within the work area. Readings may be taken at different places/ times during the day.

The degree and type of assessment will depend upon the scope and extent of the problem in the workplace, but all the risks arising from noise should be considered.

**Who should be involved?**

**Assessing the risks**

Those individuals who may be more at risk should be identified in the risk assessment i.e. young persons, pregnant and nursing mothers. Those with any form of disability will need special consideration.

Based on the risk assessment suitable actions should be considered and put in place to:

* where possible, eliminate sources of noise
* control the noise at source i.e. absorbing materials
* limit exposure times i.e. managing the time people spend in noisy environments, job rotation, including the marking of and restriction of access to, workplace areas where workers are likely to be exposed to harmful noise levels.

inform, consult, and train workers about the risks faced, how to lower noise working measures, and how to use noise protection:

* provide personal protective equipment to employees as a last resort
* monitor the risks and review preventive measures. If any employees are found to be at risk or if a new employee begins work in an area where there are risks then they should be assessed.

**Monitoring**

Employers should check regularly that the measures in place to prevent or control noise are still working effectively. Depending on their noise exposure, workers have a right to appropriate health surveillance. Where this occurs, individual health records must be kept and information provided to the employees. The knowledge gained from the surveillance should be used to review the risk assessments and control measures.

**What practical options for controlling noise exposure are available?**

**Control measures**

The removal of a source of noise is the most effective way to prevent risks to workers, and should always be considered when new work equipment or workplaces are planned. A ‘no noise or low noise’ procurement policy is usually the most cost-effective way to prevent or control noise.

The reduction of noise, either at its source or in its path should be the primary focus of noise management. Managers should consider all equipment and its maintenance as well as the design/layout of the workplace.

* a range of engineering controls can achieve this, including:
* isolation of the source, via location, distance (of plant and/or individuals), enclosure of machinery, or vibration damping
* reduction at the source or in the path — using enclosures and barriers, mufflers or silencers or by reducing machine speeds
* replacement or alteration of machines — including belt drives as opposed to noisier gears, or electrical rather than pneumatic tools
* application of quieter materials — such as rubber liners in bins, conveyors, and vibrators
* active noise reduction (‘anti-noise’), in certain circumstances
* carrying out preventive maintenance: as parts become worn, noise levels can change.

Where noise cannot be adequately controlled at source, further steps should be taken to reduce the exposure of workers to noise.

These can include:

* changing the workplace - sound absorption in a room (e.g. a sound absorbing ceiling or piece of equipment) can have a significant effect on reducing workers’ exposure to noise.
* work organisation (e.g. using working methods that require less exposure to noise) and
* work equipment - how work equipment is installed and where it is located, can make a big difference to workers’ noise exposure.

The ergonomics of any noise control measure should be considered. When noise control measures create difficulties for workers to carry out their jobs, they may be modified or removed, rendering them ineffective.

**What information and training do managers need to provide?**

individuals should receive information and training to help them understand and deal with the noise-related risks. This should cover:

* The risks faced, as well as the measures taken to eliminate or reduce them.
* The results of the risk assessment and any noise measurements, including an explanation of their significance.
* Noise control and hearing protection measures, including Personal Protective Equipment (PPE).
* Why and how to detect and report signs of hearing damage.

**When and why individuals are entitled to health surveillance?**

This is available through a referral to Occupational Health, who can also give you more information on the requirements for health surveillance.

**What should I consider when thinking about personal protective equipment?**

Personal protective equipment, such as earplugs and earmuffs, should be used when the first action level (80dB) has been identified. It should be used as a last resort after all efforts to eliminate or reduce the source of the noise have been exhausted. Issues to take into account when using PPE include:

* Making sure the PPE chosen is appropriate for the type and duration of the noise and is compatible with other protective equipment that may have to be worn.
* Employees should have a choice of suitable hearing protection so they can select the most comfortable solution.
* The PPE should be correctly stored and maintained.
* Training should be given on why the PPE is necessary, how it should be used, how to store and maintain it and what to do if there are any problems.