



Strategic considerations. Do I have an industrial noise issue at work?

Introduction

This Fact Sheet will help you determine if you have an industrial noise issue at work, deciding what action to take, understanding what constitutes a noise issue and daily exposure limits. It will also remind you of why noise at work and hearing loss matters, and give you some pointers regarding actions and best practice approach to control and demonstrable compliance.

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

- Noise is intrusive – for example, as noisy as a busy road or a crowded restaurant. Alternatively noise exposure is prolonged over time
- Employees have to raise their voices to carry out a normal conversation when about 2m apart for at least part of the day
- Employees use noisy powered tools or work with machinery for over 30 minutes daily
- Your sector is one known to have noisy tasks (eg manufacturing, processing, power generation, automation. Especially construction, demolition, woodworking, plastics processing, engineering, textile manufacture, general fabrication, forging or stamping, paper or board making, canning or bottling, foundries, waste and recycling etc)
- There are noises due to impacts (such as hammering, drop forging, pneumatic impact tools etc), explosive or other significant powerful sources or sustained, low volume but continuous background noise

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 anything above applies, it is likely you will need to take further action. Ordinarily, this entails commissioning a Noise Risk Assessment (new every 2 years), or a Review (change in circumstances / equipment, operating exposure). You should also develop a noise management / control plan.

A Noise Risk Assessment means more than just taking measurements of noise. Your Risk Assessment should:

- Identify where there may be a risk from noise and who is likely to be affected, including;
 - risks to health
 - risks to safety
- Contain an estimate of your employees' exposures to noise (see 'Noise exposure levels')
- Identify what is needed to comply with the law (eg whether noise-control measures and/or personal hearing protection are needed, or whether working practices are safe)
- 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 internal risk assessment or commission an independent 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. You should not leave it for more than about two years without checking whether a review is needed.

Noise exposure levels

You are required to make a reliable, representative estimate of your workers' daily personal noise exposure. 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, LC_{peak} , 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
- How the work might vary from one day to the next. It may be possible for you to estimate the LEP,d or the LC_{peak} 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
 - 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 LEP,w . Noise exposure calculators are available on the HSE website and several free apps will help. In addition, see SonoLab's 'How to model industrial noise' Fact Sheet.

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 (LEP,d or LEP,w)	80	85
Peak sound power (LC_{peak})	135	137

Take action

These seven basic steps will help you safeguard your workforce, optimize safety and predictably guarantee compliance.

- 1.) Understand noise risk and what is happening on site
- 2.) Understand causes of noise performance
- 3.) Separate out standard protection and wearable protection measures
- 4.) Maintain proper, full, Risk Assessments and Risk Assessment Reviews
- 5.) Model industrial noise effectively
- 6.) Consider practical ways to manage and mitigate all noise (engineer-out)
- 7.) Support your workforce with proper communication, personal protection, educational real-time communication of noise levels as part of your daily operating routine, CSR and environmental strategy and H&S strategy

The Facts

- Noise-induced hearing loss is 100% preventable, but once acquired, hearing loss is permanent and irreversible
- Around 33% of people with a hearing loss, developed it because of exposure to noise
- HSE corporate prosecutions are rising owing to inadequate or ineffective hearing loss action
- Noise-induced hearing loss is the result of the intensity and duration of exposure. It can happen without pain. It can come on rapidly or slowly over time. It can be experienced outside work but relate to long-term work-induced risk
- All UK employers operating a work environment with noise levels of 85 decibels or more, are required to have effective hearing conservation programmes

Noise levels are hazardous when ...

- You have to shout so your voice can be heard.
- You can't hear someone talking to you from 1m away
- You have ringing or pain in your ears during or even after leaving a noisy area
- Sounds and/or speech seem "muffled" or distorted after exposure to noise.
- Others can hear the sound coming from your headset

Noise levels

Examples of sounds and their decibel levels:

30 dB: Whisper, quiet library
40 dB: Quiet room
50 dB: Moderate rainfall
60 dB: Conversations, dishwasher
70 dB: Busy traffic, vacuum cleaner
80 dB: Alarm clock, busy street
90 dB: Lawnmower, shop tools, truck traffic, subway
100 dB: Snowmobile, chainsaw, pneumatic drill
110 dB: Rock music, model airplane
120 dB: Jet plane take-off, car stereo, band practice
130 dB: Jackhammer
140 dB: Firearms, air raid siren, jet engine

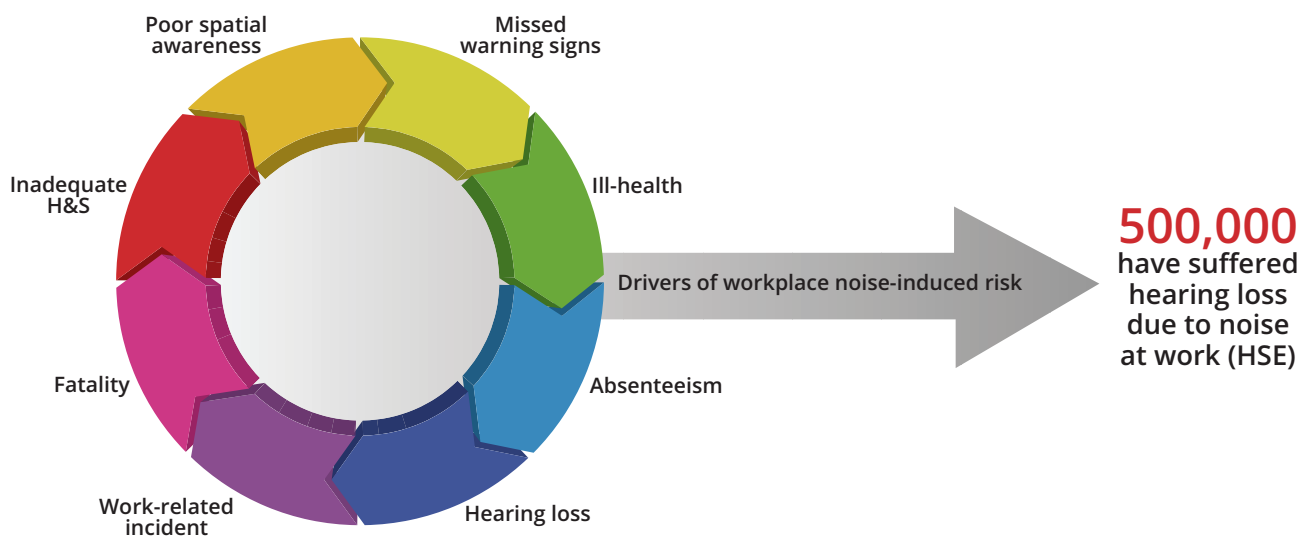
Daily exposure limits*

The amount of time it takes for damage to occur:

90 dB: 8 hours
92 dB: 6 hours
95 dB: 4 hours
97 dB: 3 hours
100 dB: 2 hours
102 dB: 1.5 hours
105 dB: 1 hour
110 dB: 30 minutes
115 dB: 15 minutes or less

*Ear protection is recommended whenever you are going to be exposed to loud / prolonged noise. Ear protection effectiveness varies depending on what you buy. You get what you pay for.

Why noise matters



About SonoLab

SonoLab are hearing loss prevention and compliance specialists. We supply high quality consulting and practical engineering across industrial acoustics, noise management and protection (design and install). We specify and fit remote monitoring, eSigns and smart dashboards which help you monitor site compliance and demonstrate safety. Our focus is on sound compliance and prevention of hearing loss through work-induced noise. We engineer-out noise. We also pioneered and supply Instant Fit Custom-Moulded earplugs for customers around the world.

Further information

By visiting the SonoLab website at www.sonolab.com, you can learn more and get free downloads. **Discover our tactical noise control quick wins** (Fact Sheet). Read **'How to model industrial noise'** (Fact Sheet). Share pictures and / or video and **ask for remote noise risk support** or a **free site survey** (90 minutes).



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In accordance with best principles recognised by IOA, BSI and standards set out in BSEN ISO17025.