Ultimate Industrial

HEARING PROTECTION
STANDARDS & REGULATIONS 2019

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Regulations Involving Hearing

Before purchasing hearing protection it is important to clearly identify the relevant hazards which cannot be reduced by other means (e.g. fitting silencers or screens) or eliminated at source. Most hearing protection commonly used is covered by EN 352 and the relevant sections for our products are summarised below. For industrial applications the Control of Noise at Work Regulations 2005 set action and limit values for noise In the workplace

Action Value	Noise Level Exposure	Recommended Action
Lower	80dB (A), peak sound pressure of 135dB(C)	• Undertake suitable and sufficient risk assessment • Make hearing protection available on request • Provide employees with information, instruction and training.
Upper	85dB (A), peak sound pressure of 137dB(C)	• Reduce exposure to noise to as low as is reasonably practical. • Provide hearing protection • Define hearing protection zones • Carry out heath surveillance (where needed)

Exposure Limit Value - a daily or weekly personal noise exposure of 87 dB(A) and a peak sound pressure of 140 dB (C)

Hierarchy Of Control Measures

1. Elimination or Substitution.

Consideration should be to made as whether the noise can be eliminated completely by altering the process or by substituting it for something which is less noisy.

2. Engineering Controls

If the above is not possible, engineering controls should be used to reduce noise at its source or help to prevent its transmission. Examples include: acoustic enclosures, vibration isolation and room treatments.

2. PPE Controls

If it is still not possible to control noise to a safe level, PPE should be used as a last resort.

Common Applicable Standards

Standard	Detail
EN 352-1	For Ear Muffs
EN 352-2	For Ear Plugs.
EN 352-3	For Helmet Mounted Ear Muffs.
EN352-4	For Level Dependent Ear Muffs.

Standard	Detail
EN 352-5	For Active Noise Reduction Ear Muffs.
EN 352-6	For Ear Muffs with Electrical Audio inputs
EN352-7	For Level Dependent Ear Plugs.

SNR

The SNR is the "Simplified Noise Level Reduction" or "Single Number Rating" which is the simplest way of getting a general indication for the level of protection provided. It is generally used to compare different types of hearing protectors. In very simple terms the calculation would be:

Noise Level 100 dB

Hearing Protector SNR -30 dB

Noise Reaching Ear 70 dB

The noise reaching the wearer should not exceed 87 dB and preferably lie between 70 - 80 dB. This calculation does not take into account different frequencies so may not be the most suitable measurement.

HML

HML is "High, Medium and Low" and defines the protection at high, medium and low frequencies. The different attenuation values for each frequency range are usually shown on the packaging of the hearing protection. This can be more precise than the SNR value as an SNR of 30 dB may not be applicable across all frequencies.

dB (decibel)

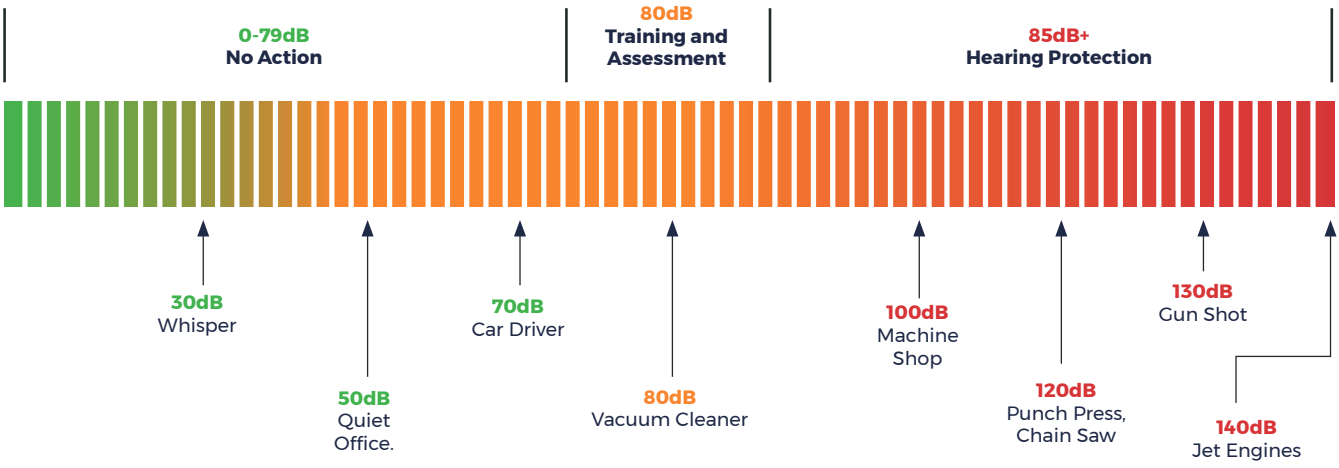
dB (decibel) is used to measure the sound intensity. Because the human ear can register sounds across a huge range of intensities a linear scale is not suitable for measurement. The dB scale is therefore a log scale which in very simple terms means the sound intensity roughly doubles for every 3 dB increase. An increase of 20 dB would increase the sound intensity 100 times, (ie 60 dB is 100 times louder than 40 dB).

Protection should ideally limit exposure to between 70 - 80 dB at the ear and not exceed 87 dB. However it is also important not to over protect as the wearer may not be able to hear other sounds such as fire alarms or vehicles. The user may also feel isolated resulting in reluctance to wear the hearing protection when needed. It is, therefore, best not to implement a blanket wearing of hearing protection only specifying protection where it is actually required.

Selecting Appropriate Protection

How To Decide On Protection Levels - A Simple Guide

The best way to decide on whether or not protection is needed is to arrange a specialist survey from an independent professional.
If an employee needs to raise their voice to be heard a few feet away then the noise levels may be over 85 dB and immediate action should be taken.



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