Understanding noise exposure terms

Noise exposure terminology - a glossary

Exposure action values (EAV): Levels of exposure to noise at which certain actions need to be taken. The values are:

Lower exposure action values (LEAV):

- daily or weekly exposure of 80 dB:
- peak sound pressure of 135 dB;

Upper exposure action values (UEAV):

- daily or weekly exposure of 85 dB;
- peak sound pressure of 137 dB.

Exposure action values and exposure limit values			
	Daily or weekly personal average noise exposure	**Peak sound level**	**Actions**
Below lower exposure action values	Less than 80 dB (A-weighted)	Less than 135 dB (C-weighted)	Reduce noise levels as far as reasonably practicable.
Lower exposure action values	80 dB (A-weighted) or above Cannot take the effect of hearing protection into account	135 dB (C-weighted) or above Cannot take the effect of hearing protection into account	Undertake risk assessment. If any employees are identified as being particularly susceptible to noise, health surveillance should be implemented. Make suitable hearing protection available. Establish a maintenance programme for equipment supplied to reduce noise risk such as noise limiters and hearing protection. Provide training.
Upper exposure action values	85 dB (A-weighted) or above	137 dB (C-weighted) or above	Implement the actions required by lower exposure action values (above). Establish and implement a programme of

	Cannot take the effect of hearing protection into account	Cannot take the effect of hearing protection into account	control measures. If these measures are not sufficient to reduce exposure below 85 dB then: • suitable hearing protection must be worn; and • a health surveillance programme implemented.
Exposure limit values	87 dB (A-weighted) Allowed to take hearing protection into account	140 dB (C-weighted) Allowed to take hearing protection into account	Must reduce to below limit values.

L_{Aeq}**:** The 'equivalent' continuous noise level that would deliver the same noise dose as a varying level over a given period, and is a good way of describing the average level of noise.

$L_{EP,d}$**:** Daily personal noise exposure level. It is averaged over an 8-hour period rather than the actual time in the work environment.

$L_{EP,w}$**:** Weekly personal noise exposure level. It is averaged over a period of 5 days (40 hours) by measuring the noise exposure on each of 7 days, then dividing the result by 5. Limit values: See 'Exposure limit values'.

Noise dose: See 'Noise exposure'.

Noise exposure: 'The noise dose', which can be calculated, takes account of the actual volume of sound and how long it continues. Noise exposure is not the same as sound level, which is the level of noise measured at a particular moment.

Noise limiters: Sometimes known as volume regulatory device (VRD), controls noise exposure from amplified music. Modern noise limiters can be fitted with anti-tamper relays connected to external switches to improve system security.

Noise measurements: Decibels (dB) are used for measuring noise. A-weighting is used to approximate to the frequency response of the human ear. C-weighting is used to measure peak, impact or explosive noise.

Occlusion effect: Occurs when an object (like an unvented earplug) completely fills the outer portion of the ear canal. This changes the way sounds are produced in the ear canal, especially noises produced by the body (for example breathing, swallowing and noise travelling through bone and tissue.) The result is these noises appear louder.

Simple listening checks: An easy way of establishing whether there might be a noise problem. Where it is difficult to hold a normal conversation without shouting or where there is

live amplified music (as in a pub, club or pop concert) it is probable that the noise is above the lower exposure action value.

Single number rating (SNR) value: Method of indicating the degree of protection offered by a hearing protector.

Sound restoration: Device in earmuffs that reduces ambient noise levels to allow relayed communication or other signals at a reduced level.

Three-decibel rule: The sound intensity doubles with every three dB increase. Thus sounds at 88 dB are actually twice as intense as they are at 85 dB and 115 dB is 1000 times as intense as 85 dB.

Tinnitus: Buzzing, ringing or tone in the ear. Temporary tinnitus is a warning; a sign that 'you got away with it that time.'

VRD: Volume regulatory device (see noise limiter).

We carry out all noise assessments requirement using our experienced safety consultants. If you have a need for noise assessment please call us on 01458 253682