



*Consultants in
Noise & Vibration
and Condition Monitoring*



The Physical Agents (Noise) Directive A Plain English Guide

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The Physical Agents (Noise) Directive A Plain English Guide

This guide explains the regulations on exposure to noise in industry which will be introduced into the UK by mid February 2006. The new regulations will result from 'Directive 2003/10/EC of the European Parliament and of the council of 06 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)'.

The regulations will be called 'The Control of Noise at Work Regulations 2005'.

In this guide we cover what the new noise exposure limits will be, who will be affected by the regulations and what employers and employees should do to comply.

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1.0 Definitions

Peak Sound Pressure (P_{peak})

This is measured in units of pressure (pascals) and not decibels. It is the maximum instantaneous noise pressure measured on a 'C' weighted frequency scale. 'C' weighting is used as it is almost a linear weighting which is incorporated in many commercial sound level meters.

Daily Noise Exposure Level ($L_{EX,8h}$)

Because noise exposure depends on both the amplitude of noise and the duration of exposure, the daily noise exposure level is the time weighted average of the noise level experienced. It is normalised for an 8 hour working day so that if for example the exposure time per day is more than 8 hours, the noise level to which an employee is exposed must be reduced.

The $L_{EX,8h}$ is a direct replacement of the old $L_{EP,d}$ and is measured in dBA.

Weekly Noise Exposure Level

This is simply the time weighted average of daily noise exposure levels for a standard 40 hour working week.

2.0 What are the limits ?

There are two action values and a limit value:

Action Value

The two action values are:

1. *The Lower Exposure Action Value*
2. *The Upper Exposure Action Value*

- (1) The Lower Exposure Action Value is 80dBA $L_{EX,8h}$ and peak pressure P_{peak} of 112 pascals.
- (2) The Upper Exposure Action Value is 85dBA $L_{EX,8h}$ and peak pressure, P_{peak} of 140 pascals.

These 'Action Values' do not take into account the attenuating effect of ear protectors that employees would be wearing.

Limit Value

The exposure limit value is similar to the action value except that the attenuation provided by ear protection is taken into account. The exposure limit value is 87dBA $L_{ex,8L}$ and peak pressure P_{peak} of 200 pascals.

Variable Daily Exposure

In some industries particularly where production is of a batch rather than continuous nature, noise exposure varies greatly from day to day. When this the case, the Directive suggests the use of a weekly noise exposure level.

3.0 Employers Duty

1. The employer must assess the risk of excessive noise exposure and if necessary, measure it. Measurements of noise exposure must take into account both the amplitude and exposure time.

The measurements can include the use of noise dosimeters which capture the exposure of the individual wearing the device.

The measurement survey must be performed by a person competent in the subject. The assessment must be stored so that it can be referred to later.

3.1 Noise Assessment: What Should Be Included?

The important items to be included are:

1. The noise level and duration of daily exposure for individual employees. If the worker experiences different noise levels on different days, the period of one week can be used.
2. Action and Limit Values

Determination of the action value or limit value that is applicable to the exposure level.

Also the assessment should consider the risk to particularly sensitive individuals or groups, the effect of extending the working day, information on quieter equipment that may be available and the availability and performance of ear protectors.

Once the assessment is done, the employer must ensure that it is kept up to date as changes in equipment or shift patterns occur. Keeping the assessment up to date is not too onerous. Once the exposure levels for employees are known, there are further obligations on employers. The principal obligation is to reduce noise exposure. This should take into account the following:

3.2 Reducing Noise Exposure

Wherever possible, reduction of noise at source is preferred. In particular the employer should use quiet working methods and equipment. Work places and work stations should be designed to minimise the noise exposure.

The employer should reduce noise using suitable techniques depending on whether noise is predominantly air borne or structureborne. Also equipment should be well maintained as it is known that poorly maintained equipment tends to be noisier.

Work should be planned so that times spent in noisy situations is limited and that rest from noise is provided.

Upper Action Value

In particular, if the upper action value is exceeded the employer is to reduce noise by either technical means and or organisational means. Warning signs must be displayed and if possible access to these noisy areas restricted.

Ear Protection

Once the possibility of noise reduction by technical or organisational means has been eliminated, efficient ear protection must be made available and must be used. The employer must see that this is done.

There are no circumstances in which employees can be allowed to exceed the Exposure Limit Value.

3.3 Training and Information

Employees must be educated in the dangers of noise exposure and what the limits are. They must also be informed of the results of the noise assessment and understand what it means to them.

It is important that they know how to wear ear protection correctly to benefit from its use and to recognise hearing damage and know how to report it.

Employers should always consult with and involve workers in these three stages:

1. Assessment of risks and noise control measures.
2. Actions to be taken.
3. Selection of individual ear protection.

3.4 Hearing Checks

Lower Action Value (LAV)

Workers exposed to noise excluding the LAV shall have the opportunity for audiometric testing. This will enable an early diagnosis of a potential problem.

Upper Action Value (UAV)

In addition to routine audiometric tests, workers exposed to noise in excess of its UAV has the right to have their hearing checked by a medical doctor or at least by a qualified person responsible to a doctor.

Records

Records must be kept of:

1. Noise assessments.
2. Audiometric tests.
3. The reports must be available to the individual concerned.

3.5 Hearing Damage

Where an employee is found to have suffered hearing damage, the doctor or specialist must assess whether or not the damage is due to noise at work.

If noise at work is the culprit, the employer must review the assessment and noise control measures and take advice on measures to reduce noise exposure. The employee should be given the opportunity to do alternative work in a quieter area.

SRL Industrial provides a comprehensive service in noise assessment and control. Training courses are also provided on:

- Noise Awareness
- Noise Control for Engineers
- Meeting Noise Regulations