Noise at Work Guidance

The Control of Noise at Work Regulations 2005 are designed to protect against the risks to both workers health and safety from exposure to noise and to ensure that workers' hearing is protected from excessive noise at their place of work, which could cause them to lose their hearing and/or to suffer from tinnitus (permanent ringing in the ears).

By law, as an employer, you must assess and identify measures to eliminate or reduce risks from exposure to noise so that you can protect the hearing of your employees.

Where the risks are low, the actions you take may be simple and inexpensive, but where the risks are high, you should manage them using a prioritised noise-control action plan.

Conducting a noise risk assessment ensures that valid decisions about the risks operatives are exposed to, have been considered. It also determines what actions must be taken to ensure the risk is eliminated or adequately controlled. If it is likely a noise hazard exists in the workplace then the employer will more than likely need to have a noise assessment carried out by a competent person. The noise assessment will involve measuring noise levels with specialist equipment, assessing the exposure and developing an action plan

In order to carry out a suitable and sufficient risk assessment, it is necessary to know the maximum exposure limit values and action values.

	Lower Action Levels	**Upper Action Levels**	**Exposure Limit Values**
Daily/weekly average exposure level	80 dBA	85 dBA	87 dBA
Peak sound level	135 dBC	137 dBC	140 dBC

In order to assess the risk from noise there are 5 stages that the employer should consider:

- Is there a risk due to noise
- Who might be harmed and how
- Evaluate the risk and develop control measures
- Record the findings
- Review the assessment

Is there a risk due to noise

If you answer yes to any of the questions below you have a potential risk from noise and should undertake further investigation:

- Do you work in a noisy industry?

- Do operatives use noisy powered tools or machinery?
- Are there noises due to impacts, e.g. pneumatic impact tools, explosives, hammering?
- Could noise levels within the workplace interfere with warning or danger signals?
- Do operatives need to shout to talk at a distance of 1m for more than ½ hr per day in total?
- Do operatives need to shout to talk at a distance of 2m for more than 2hrs per day in total?
- Is conversation possible but noise intrusive?

Who might be harmed and how

The persons who may be affected by the noise may include, but are not limited to:

- The operator of noisy machinery or employee carrying out a noisy activity
- Other employees working in the vicinity of the noisy activity
- Employees who carry out different jobs throughout the day
- Contractors or visitors that enter the vicinity of the noisy activity
- Personnel working in noisy areas on Clients sites

Simple test to see if a noise assessment is required.

Test	Probable Noise Level	Risk Assessment required if exposed longer than
Noise intrusive but normal conversation possible	80dB	6 Hours
Having to shout to have a conversation at 2 metres	85dB	2 Hours
Having to shout to have a conversation at 1 metre	90dB	45 Minutes

If in doubt carry out a risk assessment.

Evaluate the risk and develop control measures

Noise levels that employees are exposed to need to be determined in either daily or weekly personal noise exposure levels. In order to make this estimation it is necessary to make reference to probable levels of noise relating to both equipment and conditions. When employees are working on other employer's sites, the host employer should have risk assessments in place for any areas or activities where exposure to noise poses a risk. These should be readily available to anyone who may be exposed to the noise while working or visiting that site.

It is not necessary to make a precise assessment of noise exposure however you must be able to demonstrate that the data used to make your assessment is both reliable and representative of your employee's exposure (see appendix 1). In the event that the information used is not from measurements within the workplace, it is necessary to demonstrate that the data is representative and you must apply a greater uncertainty factor. In determining the length of time that operatives are exposed to noise, it is best to use direct observation of the work as well as discussions with the operative.
A Noise Exposure Calculator can be found at www.hse.gov.uk/noise.

Assessing weekly personal noise levels may not be appropriate unless daily noise exposure on 1 or 2 working days in a week is at least 5dB higher than the other days, or the working week comprises 3 or fewer days of exposure. External assistance from a competent person may be required.

Once the relevant levels of exposure have been assessed it is necessary to check against the exposure action values to determine the level of control required, and to address the immediate risk by issuing suitable hearing protection.

Once the immediate risk has been dealt with, it is necessary to determine what can be done to control the noise, how much it can be reduced and what is reasonably practicable and relevant to your industry. Establish a plan of action to prioritise the methods of noise reduction and a realistic timescale to bring about the changes.

Cost will ultimately dictate the implementation timetable for any relevant controls. However, as long as adequate protective measures are in place, then more expensive control measures could be planned into a medium to long-term priority.

When assessing the risks from noise exposure the following hierarchy of control measures must be considered:

- Determine whether it is reasonably practicable to carry out the process without the noisy tools or machinery
- Reduce noise output by engineering methods, e.g. damping
- Modify the work or process to reduce noise levels
- Procure quieter tools or machinery, which are suitable for the task
- Control the path of the noise reaching people
- Arrange the workflow to separate people from the source of the noise

An example risk assessment form is attached in the document library – Noise Risk Assessment Form. The assessment must be recorded along with the findings and reviewed on a regular basis.

Hearing Protection

The general requirements of hearing protection are as follows:

- It must be made available for employees to use when the lower action level of 80 dB(A) is exceeded
- It must be used by employees when the upper action level of 85 dB(A) is exceeded
- Employers must provide training on the use of ear protection
- Employers must ensure that any hearing protection which is provided is properly used and maintained

Maintenance and Use of Equipment

- All equipment to be fully and properly used
- All equipment to be maintained

Ear Protection Zones

- Identify zones where an employee's noise exposure exceeds the second action level Mark with signs

Information, Instruction and Training

Employees need to know:

- The risks
- The control measures
- Where to get hearing protection
- How to use and look after the hearing protection

- The purpose of health surveillance

Employees are also responsible for using hearing protection and reporting defects

Other Simple Measures

- The most efficient and effective way of controlling noise is by technical and organisational means that protect workers at source, eg changes in process, reducing vibration (damping) and reducing time spent in noisy areas.

References

Control of Noise at Work Regulations 2005:
http://www.opsi.gov.uk/si/si2005/20051643.htm

Controlling noise at work. Guidance on the Control of Noise at Work Regulations 2005.
L108, ISBN 0 7176 6164 4 HSE Books
This book replaces the 1998 edition of L108 Reducing Noise at Work. Guidance on the Noise at Work Regulations (ISBN 0 7176 1511 1).

Sound Advice: control of noise at work in music and entertainment. HSG260. HSG260, 0 7176 6307 1 HSE Books.
This book contains practical guidance on the control of noise at work in music and entertainment.

HSE's free employers leaflet Noise at Work - Advice for employers INDG362 (rev 1)
This leaflet is for employers on good practice and considering what they need to do

HSE's free pocket card Protect your hearing or lose it! INDG363
Contains notes on good practice which you may find helpful.

APPENDIX 1

Examples of approximate Noise levels (dB)

Decibel Range	Example Situation
0	Faintest audible sounds
15 – 25	TV and Sound Studio
20 - 30	Quiet Library
45 – 50	Quiet Office
55 – 60	Conversation
65 – 75	Loud Radio
65 - 80	Primary Classroom
70 – 75	Tractor cab
90 – 100	Arc Welding
90 – 100	Power Drill
95 – 105	Night Club Bar
100 –105	Road Drill
105 – 115	Chainsaw
110 – 115	Punch Press
115 – 120	Boiler Shop
140	Jet Aircraft taking off, 25m away

APPENDIX 2

Noise Exposure Points – Worked Example

An employee has the following typical work pattern: five hours working where a 'Listening check' suggests the noise level is around 80 dB: two hours at a machine for which the manufacturer is declared 86 db at the operator position (a 'listening check' suggests this is about right): 45 minutes on a task where noise measurements have shown 95 dB to be typical.

Noise Level	Duration	Notes	Exposure Points
		No Column for 5 Hours so add together	
80	5 hrs	Values from 4 and 1 hour columns in row corresponding to 80 dB	16 + 4 = 20
86	2 hrs	Directly from table	32
		No column for 45 minutes so add	
95	45 mins	together values from 30 + 15 minute columns in row corresponding to 95 dB	65 + 32 = 97
		Total noise exposure points	149
		Noise exposure dB	86 to 87

Daily Noise Exposure Ready-Reckoner

Sound Pressure level dB	Duration in hours								Total Exposure points	Noise Exposure dB
	1/4	1/2	1	2	4	8	10	12		
95	32	65	125	270	500	1000			800	94
94	25	50	100	200	400	800			630	93
93	20	40	80	160	320	630			500	92
92	16	32	65	125	250	500	625		400	91
91	12	25	50	100	200	400	500	600	320	90
90	10	20	40	80	160	320	400	470	250	89
89	8	16	32	65	130	250	310	380	200	88
88	6	12	25	50	100	200	250	300	160	87
87	5	10	20	40	80	160	200	240	130	86
86	4	8	16	32	65	130	160	190	100	85
85		6	12	25	50	100	125	150	80	84
84		5	10	20	40	80	100	120	65	83
83		4	8	16	32	65	80	95	50	82
82			6	12	25	50	65	75	40	81
81			5	10	20	40	50	60	32	80
80			4	8	16	32	40	48	25	79
79				6	13	25	32	38	20	78
78				5	10	20	25	30	16	77
75					5	10	13	15		

Where the exposure of an employee to noise varies from day to day, and employer may use weekly personal noise exposure in place of daily personal noise exposure.

Weekly Exposure Ready-Reckoner

Daily Noise Exposure dB	Points							Total Exposure Points	Weekly Noise Exposure dB
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7		
95	1000	1000	1000	1000	1000	1000	1000	5000	95
94	800	800	800	800	800	800	800	4000	94
93	630	630	630	630	630	630	630	3200	93
92	400	400	400	400	400	400	400	2500	92
91	500	500	500	500	500	500	500	2000	91
90	320	320	320	320	320	320	320	1600	90
89	250	250	250	250	250	250	250	1300	89
88	200	200	200	200	200	200	200	1000	88
87	160	160	160	160	160	160	160	800	87
86	130	130	130	130	130	130	130	630	86
85	100	100	100	100	100	100	100	500	85
84	80	80	80	80	80	80	80	400	84
83	65	65	65	65	65	65	65	320	83
82	50	50	50	50	50	50	50	250	82
81	40	40	40	40	40	40	40	200	81
80	32	32	32	32	32	32	32	160	80
79	25	25	25	25	25	25	25	130	79
78	20	20	20	20	20	20	20	100	78

Ref: Controlling Noise at Work. Guidance on the Control of Noise at Work Regulations 2005, L108, ISBN 0717661644 (available from HSE Books 01787 881165)