



Noise in Construction

This booklet provides further guidance to The Noise at Work (NAW) Regulations 1989.* Although aimed primarily at construction workers, this guidance is equally relevant to all types of industry.

* Refer to *Introducing the Noise at Work Regulations: A brief guide to the requirements for controlling noise at work*

decide if a noise assessment is needed

If people have difficulty speaking to each other over approximately 2 m then you will need to make a *noise assessment*. This should take account of others who may be affected as well as your own employees.

assess the noise

The assessment should be made by a *competent person* - someone who understands the NAW Regulations and the Health and Safety Executive's (HSE) guidance on assessments and how to apply it.

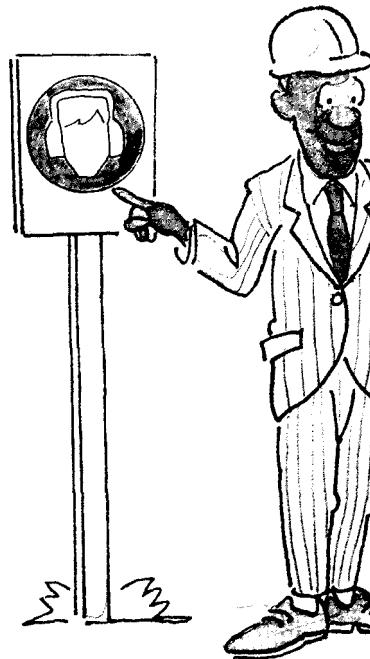
An initial, estimated assessment can be made either by using manufacturers' data or other reliable information which is available. This would be a 'first step' towards complying with the NAW Regulations and would enable you to identify workers who need personal protection straight away. Also, on multi-contractor sites, the various employers will need to agree who should co-ordinate compliance with the Regulations. Usually the contractor in overall charge of the site does this.

Action levels are values of 'daily personal exposure to noise- $L_{EP,d}$ ' which depend on working area noise levels and exposure times. *The first action level* is 85 $dB(A), L_{EP,d}$ and the *second action level* is 90 $dB(A), L_{EP,d}$.

The *peak action level* is the maximum pressure allowed to be reached by a sound wave, specified as 140 dB (without A weighting). This action level causes concern when cartridge tools are being used where 140 dB could be exceeded although 85 $dB(A), L_{EP,d}$ has not.

reduce noise as far as reasonably practicable

The most effective and reliable way of controlling exposure is by engineering measures at source. This can be achieved by making sure that noise reduction is built into machinery when you are buying



it. Ask for information on machine noise before you decide to buy (regulation 12 duties).

provide ear protection

Ear muffs or ear plugs should be worn by people exposed at or above 90 dB(A), $L_{EP,d}$ or the 140 dB, peak action level. This is not an alternative to controlling noise at source.

Between the 85 dB(A) and 90 dB(A) action levels you should make sure:

- (a) ear protection is freely available;
- (b) people know that unless the protection is worn there is some risk to their hearing.

Ear protection is not mandatory below the second action level, but must be worn



when entering an ear protection zone.

inform workers about the level of their personal $L_{EP,d}$ exposure

If your noise assessment shows personal exposure at or above any of the action levels inform your employees there is a noise hazard and tell them what you want them to do to minimise their risk of hearing damage.

mark ear protection zones

Zones should be marked wherever employees are likely to be exposed to the second action level or above.



wear ear protection (ear muffs or ear plugs) provided (in the absence or pending noise control) whenever you are exposed at or above the second or peak action levels, as well as when entering an ear protection zone, to meet your duties under the NAW Regulations (regulation 10).

use any other equipment your employer provides under these Regulations, eg machines fitted with silencers - don't take them off!

take care of equipment provided under these Regulations. If you discover any defects reducing their performance, you should report them!

see your doctor if you think that your hearing has become damaged

Agent (up to 50% day on site)	<80	
Asphalt paving	<85	
Blasting	100+	
Bricklayer	83	81-85
Carpenter	92	86-96
Concrete chipping/drilling	85+	
floor finishing	85	
grinding	85+	
Concrete worker	89	
Crushing mill worker	85+	
Driver crawler tractor	85+	
dumper	85+	
excavator	<85	
grader	85+	
loader	<85	
roller	85+	
wheeled loader	89	
wheeled tractor	<85	
Engineer supervising pour	96	
surveying	<80	
Foreman supervising workers	80	
Formwork setter	92	89-93
Ganger concrete pour	93	92-93
general work	94	
Guniting	85+	
Labourer concrete pour	97	95-98
digging/scabbling	100	
general work	84	
shovelling hardcore	94	
shuttering	91	
M & E installer		
general	89	82-96
small work	84	78-89
Piling operator	85+	
Piling worker	100+	
Reinforcement worker		
building site	86	82-89
bending yard	84	77-87
Sandblasting	85+	

Introducing the Noise at Work Regulations: A brief guide to the requirements for controlling noise at work HSE Books 1996 INDG75(rev) Single copies free, multiple copies in priced packs ISBN 0 7176 0961 8

Reducing noise at work. Guidance on the Noise at Work Regulations 1989 L108 HSE Books 1998 ISBN 0 7176 1511 1

Sound solutions: Techniques to reduce noise at work HSE Books 1995 ISBN 0 7176 0791 7

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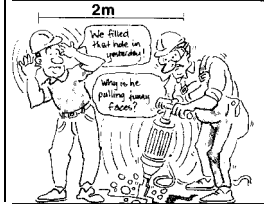
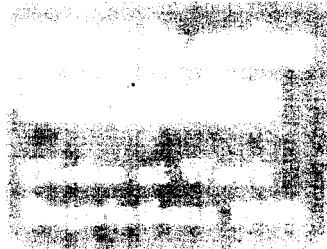
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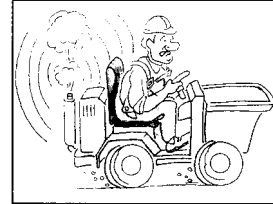
This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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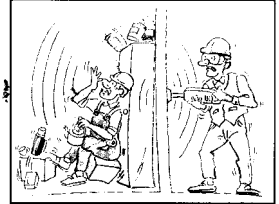
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Task 1 - Concrete breaking
3 hours 98dB(A)



Task 2 - Driving dumper truck
4 hours 93dB(A)



Task 3 - Meal breaks (Hammer drill at other side of wall) 1 hour 88dB(A)

Example of noise assessment
By: Competent Person

Employee: Mr I Don-Muffs
Site: Hush-Hush Land

Date: 12th of Now

No of operators/ employees: Many

Task	Sample Leq dB(A)	Exposure Time - Hrs	Fractional Exposure 'f' values*
Task 1	98	3.0	2.37
Task 2	93	4.0	1.00
Task 3	88(est)	1.0	0.08

*Fractional exposure values calculated using information on page 6 of the Noise Guide no. 3 to the NAW Regulations

Total f = 3.45
Assessed $L_{EP,d} = 95dB(A)$

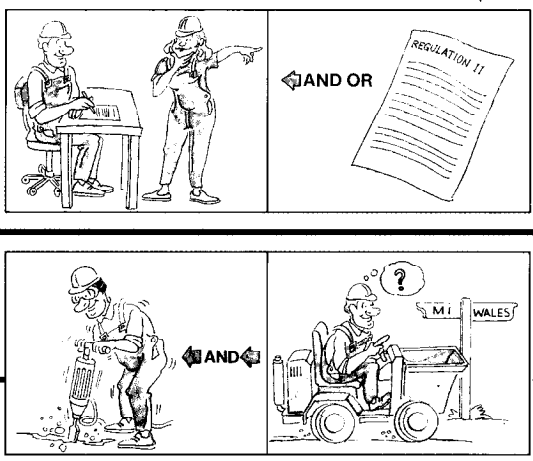
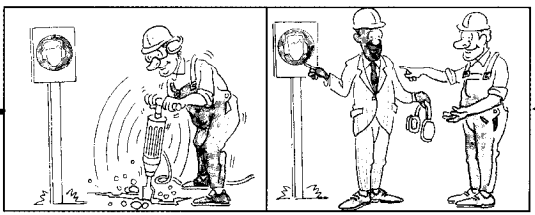
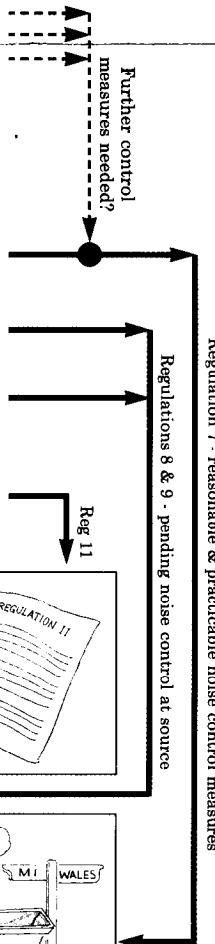
Details of proposed measures by employers facilitating compliance with regulations 7, 8, 9 and 11

Regulation 7 - Fit pneumatic pick/breaker with exhaust silencer and also dampened chisels. Renew dumper truck exhaust silencer. Reroute dumper through quieter site areas. Employees (where possible) to use mess huts or alternatively quieter mess areas for breaks.

Regulation 8 - Cosmic and Macho (helmet muffs) calculated to be appropriate ear protection from octave band analysis of site noise.

Regulation 9 - Position at 12 m distance from concrete breaking an 'Ear Protection Zone' boundary, using BS 5378 pt 1 : 1980 signs. Ear protection must be worn by employees entering such zones.

Regulation 11 - Inform employee/s personal $L_{EP,d}$ is 95 dB(A) giving nearly four times the risk to hearing damage to that of the 90 dB(A) second action level. Suitable and efficient ear protection is available and must be worn. Regulation 10 places a duty on employees to comply with the Regulations, and also requires the reporting of defects in any noise control equipment.



Addressing most significant 'f' value first

Reassessment afterwards (Record of assessments - Regulation 5)