



Management of noise in construction



Exposure to loud noises at work can cause irreversible hearing damage, workplace accidents and be a contributing factor to other health problems. This factsheet provides an introduction to the management of noise in construction both before and during work on site.

Noise in construction

There are many noisy tasks in construction. This means that workers may be exposed not only to the noise that their work is making, but also to the ambient, or background, noise of other tasks on site. Some of the main sources of noise in construction are:

- impacting tools (such as concrete breakers);
- use of explosives (such as blasting, cartridge tools);
- pneumatically powered equipment;
- internal combustion engines.

Managing noise — before work starts on site

Plan your noise control measures at the:

- design stage — design out or minimise noisy work;
- organisational stage — plan how the site will be managed and the risks controlled;
- contractual stage — ensure that contractors meet their legal requirements;
- building phase — assess the risks, eliminate or control them, and review the assessment.

Before work starts on site:

- implement a low-noise procurement policy (purchase and hire) for machinery and work equipment;
- set desired noise-control requirements in the tender specifications (meeting national legislation as a minimum);
- plan the work process to minimise worker exposure to noise;
- implement a noise-control programme (for example, by planning, training, induction, site layout, maintenance activities).

Relevant legislation

- Council Directive 89/391/EEC of 12 June 1989, on the introduction of measures to encourage improvements in the safety and health of workers at work
- Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)
- Council Directive 89/656/EEC of 30 November 1989 on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace

The directives set minimum standards for health and safety. National legislation may require higher standards, so check with your enforcing authority. There are other directives that may also be relevant ⁽¹⁾. Harmonised standards also exist (for example, on the measurement of noise emissions).

Managing noise on site

Noise must be actively managed once work starts on site. This can be seen as a four-stage process.

- **Assess** — a competent person should assess the noise risks.
- **Eliminate** — remove noise sources from site.
- **Control** — put in place measures to prevent exposure, with personal hearing protection as the last resort.
- **Review** — check to see if there are any changes in the work, and amend the assessment and control measures accordingly.

Assessment

Worker noise exposure should be assessed, with particular attention being paid to the following:

- the workers and their exposure, including:
 - the level, type and duration of exposure, including any exposure to impulsive or impact noise, and whether the worker belongs to a particular risk group;
 - where possible, effects on workers' health and safety resulting from interactions between noise and vibrations, and noise and work-related ototoxic substances (substances that can harm your ears);
 - risks to workers' health and safety from failing to hear warning signals or alarms;
 - the extension of exposure to noise beyond normal working hours under the employer's responsibility;
- technical knowledge and information, including:
 - the information on noise emission provided by manufacturers of work equipment;
 - the existence of alternative work equipment designed to reduce the noise emission;
 - relevant information from health surveillance;
 - the availability of suitable hearing protectors.

Elimination of noise

Where possible, the production of noise should be eliminated. This can be achieved by changing the construction or work method. Where elimination is not possible, then the noise should be controlled.

Control

There are three steps to the protection of workers from noise, using technical and organisation measures:

- control the noise at source;

⁽¹⁾ For example, Directive 98/37/EC of the European Parliament and of the Council of 22 June 1998 on the approximation of the laws of the Member States relating to machinery.

- collective measures, including work organisation;
- personal hearing protection.

Control of noise at source

Such control measures include:

- using a machine with lower noise emissions;
- avoiding metal on metal impacts;
- damping to reduce noise or isolating vibrating parts;
- fitting silencers;
- carrying out preventive maintenance: as parts become worn, noise levels can change.

Collective control measures

Actions can be taken to reduce the exposure to noise of all those who may be exposed, in addition to the steps above. On sites with more than one contractor, liaison between employers is essential. Collective measures include:

- isolating noisy procedures and restricting access to noisy areas;
- interrupting the path of airborne noise through the use of noise enclosures and barriers;
- using absorptive materials to reduce reflected sound;
- controlling ground-borne noise and vibration by using floating slab measures;
- organising work so that the time spent in noisy areas is limited;
- planning to have noisy work done when as few workers will be exposed as possible;
- implementing work schedules that control exposure to noise.



Personal hearing protection

Personal hearing protection should be used as a last resort. Where used:

- the personal hearing protection must be worn and its use enforced;
- it should be suitable for the job, type and level of noise, and compatible with other protective equipment;
- workers should have a choice of suitable hearing protection, so that they can find the most comfortable;

(²) In circumstances laid down by national law within the context of the 89/391/EEC 'framework' and 2003/10/EC 'noise' directives.

- training should be given on how to use, store, and maintain the hearing protection.

Involve the workers

Workers on site often know about particular noise problems and possible solutions. Employees and their representatives should be consulted in the assessment procedure and in discussions on how to implement control measures.

Review

Work on construction sites changes frequently. Review the risk assessment often and amend the control measures in place accordingly.

Training

Training is an important part of noise control. Persons requiring training include:

- those carrying out the noise assessment;
- those writing the tender documentation to ensure that contractors will control noise;
- managers, so that they can meet their duties regarding control and record keeping;
- workers, who need to know how and why to use work equipment and control measures to minimise exposure to noise.

Training should be as specific as possible. Workers in the construction industry are often multi-skilled, using many different tools. They should know how to minimise their exposure to noise from each of them. Particular attention should be paid to new workers.

Health surveillance and monitoring

Workers have a right to appropriate health surveillance (²). Where health surveillance such as preventive audiometric testing takes place, there are requirements on individual health record-keeping and providing information to the worker. The knowledge gained from the surveillance procedure should be used to review the risk assessment and control measures.

Further information

This factsheet has been produced to support the European Week for Safety and Health at Work 2004. Other factsheets in the series and further information on construction are available at <http://ew2004.osha.eu.int>. This source is being continually updated and developed. Information on EU safety and health legislation can be found at <http://europe.osha.eu.int/legislation/>.