



Student Focus



Spring 2007

Student News

Welcome to the Spring 2007 RRC Student Focus.

We hope you find it a useful source of information.

Construction (Design and Management) Regulations 2007: A Briefing

The **Construction (Design and Management) Regulations 2007 (CDM 2007)** came into effect on 6 April 2007, and the Approved Code of Practice (ACoP) provides practical guidance on complying with the duties set out in the Regulations. The new, simplified CDM Regulations revise and bring together into a single regulatory package the existing (**CDM 1994**) the **Construction (Health, Safety and Welfare) Regulations 1996 (CHSW)**, and the **Construction (General Provisions) Regulations 1961**, and revoke other instruments (Schedule 4; CDM 2007).

The main aim of **CDM 2007** and the ACoP is to reduce the incidence of construction accidents and ill health by integrating health and safety into the management of the project. Everyone involved in the planning and management of the project will be expected to emphasise co-ordination, co-operation, communication and flexibility, specifically targeting health and safety by identifying risks early in the project life. It is also intended that bureaucracy associated with construction work will be minimised.

CDM 2007 includes duties relating to health and safety on construction sites with regard to safe places of work, housekeeping and site security, demolition or dismantling, explosives, excavations, reports of inspections, welfare facilities, prevention of drowning, traffic routes, vehicles, prevention of risk from fire, emergency procedures, lighting, etc. Regulation 5(2) specifies a duty on every person working under the control of another to report anything that he/she is aware of that is likely to endanger health or safety.

The duty holders for CDM 2007 are:

- **Clients** (commercial purchasers of construction/engineering works and services).
- **CDM Co-ordinators** (formerly Planning--Supervisors).

- **Designers** (anyone who prepares or modifies a design).
- **Principal Contractors** (typically "main" contractors).
- **Contractors** (typically sub-contractors).

Some of the more significant changes resulting from the introduction of the revised regulations/ ACoP include:

- A list of duties for all parties (**Clients, Designers and Contractors**) that apply to all projects (notifiable and non-notifiable), with additional duties for notifiable projects.
 - **Notifiable projects** - (with specific exceptions as outlined within CDM 2007) are those **likely** to involve more than 30 days or 500 person-days of construction work, i.e. the same as before. If a project has been fully notified to HSE under CDM 1994 there is no need to give a further notice under CDM 2007.
 - **Non-notifiable projects** - are primarily non-commercial residential work and projects which do not exceed 30 days and/or 500 man-days in duration. Duty holders involved in non-notifiable projects have the specified minimum obligations. The provision relating to 5 or more workers on site has been removed.

The main difference between the two types of project is that a **CDM Co-ordinator** must be appointed for notifiable projects and notice of the project must be given to the HSE.

No work may take place on notifiable projects, other than initial design, until the co-ordinator has been appointed.

- Domestic projects no longer need be notified. The provisions for clients' agents and developers have been removed. (One client in a project may act on behalf of all clients).



- For notification purposes, demolition is treated in the same way as other types of construction work (although a documented plan of how the work will be conducted must be prepared).
- The appointment of a **CDM Co-ordinator** under Regulation 14(1) to support and advise the **Client** (Planning Supervisors no longer exist) or a **Principal Contractor** under Regulation 14(2).
- The need for a written health and safety plan only applies to notifiable projects.
- Duty holders involved in notifiable projects have additional requirements placed upon them) and duty holders cannot appoint anyone to "manage, design or construct" anything unless they are competent or under competent supervision. Duty holders are required to establish the competence of appointees, and also to ensure their own competence prior to accepting any appointment.
- Assessment and demonstration of competence is simplified (guidance is given in the revised ACoP) and competence of relevant parties is simplified by assessment by duty holders prior to selection.
- All duty holders are to take account of the general principles of prevention set out in Schedule 1 to the **Management of Health and Safety at Work Regulations 1999** (S.I. 1999/3242) in the performance of their duties and in the carrying out of the construction work (Regulation 7).
- Co-operation and co-ordination duties now apply to everyone involved, while protective and preventive measures mirror the **Management Regulations**.
- **Client** duties are made more specific. The **Client** must take reasonable steps to ensure that work can be carried out without risks to the health and safety of anyone concerned.
- **Clients** must tell **Designers** and **Contractors** how much time they have for planning and preparation of work.
- The facility whereby **Clients** can transfer their criminal liabilities (under CDM) to a Client's Agent are removed.
- There is an enhanced duty on **Clients** to exercise their influence in ensuring effective health and safety standards during construction projects.
- A new duty on **Designers** to ensure that structures they design as workplaces comply with the relevant requirements of the **Workplace (Health, Safety and Welfare) Regulations 1992**.
- A new duty on **Designers** to eliminate hazards and reduce remaining risks, so far as is reasonably practicable.
- The former duty of the **Planning Supervisor** to prepare a health and safety plan has been replaced by that of the **Principal Contractor** to prepare a construction phase plan (Regulation 23).
- Civil liability is now restricted under **CDM 2007** only in respect of the Part 2 and 3 duties, for which there is civil liability only to employees, except in respect of the duties concerning welfare facilities and to prevent access by any unauthorised person, and of the **Client's** duty concerning the construction phase plan, for which liability is unrestricted (Regulation 45).
- Some of the definitions have changed, including those for Client, Construction Phases, Construction Work, Contractor, Design, Place of Work and Structure.

Further information on the new CDM Regulations can be found on the RRC website at: www.rrc.co.uk/CDMBooklet.aspx or a paper copy can be requested from a customer adviser. We have also developed a podcast on the new regulations which can be downloaded from www.rrc.co.uk/Podcasts

Control of Asbestos

The main regulations governing all work with asbestos on workplace premises are the **Control of Asbestos at Work Regulations 2006**. These Regulations bring together the three previous sets of Regulations covering the prohibition of asbestos, the control of asbestos at work and asbestos licensing. They cover all those people who are liable to be exposed to asbestos and place on employers an explicit duty to manage asbestos in non-domestic

premises (no decision has been taken yet relating to domestic premises).

The Regulations prohibit the importation, supply and use of all forms of asbestos. They continue the ban introduced for blue and brown asbestos in 1985 and for white asbestos in 1999. The ban applies only to new use of asbestos. If existing asbestos containing materials are in good condition, they may be left in place, provided their condition is monitored and managed to ensure they are not disturbed. However, the second-hand use of asbestos products, such as asbestos cement sheets and asbestos boards and tiles, including panels which have been covered with paint or textured plaster containing asbestos, is banned.

The most important changes from the Control of Asbestos Regulations 2002 are:

- A lower control limit of 0.1 fibres per millilitre of air measured over four hours.
- Work with textured coatings will, generally, not need to be done by a licensed contractor. It will still need to be done safely by trained, competent people working to certain standards.
- Employers can no longer carry out work in their own premises with their own workers without a licence if the work would otherwise require a licence.

Also, the new regulations are clearer that suitable training is required for anyone who may be exposed to asbestos.

Asbestos was extensively used, particularly between 1950s and mid-1980s, as a heat insulating material in the lagging of pipes and tanks and in wall and loft insulation. Asbestos cement has been widely used in panels, particularly for roofing but also for walls, and has also been used as pipework. Because of its inertness and lasting properties, asbestos has been used in ceiling tiles, and textured finishes. Sprayed asbestos coating on steel members gives improved fire resistance and prevents corrosion. Other applications of its use were in gaskets, packing plugs and asbestos rope.

Identification

Asbestos or asbestos-containing material (ACM) cannot readily be recognised even by experienced professionals, and laboratory testing of samples is often required to ascertain whether materials do contain asbestos. Recognition is also more difficult when ACM is concealed by other means, e.g. decorations or coatings. Consequently, a major problem facing workers is that often they do not

know when and where they may encounter asbestos in their work. ACMs may be present if the building was constructed or refurbished before blue and brown asbestos were banned in 1985, and asbestos cement was used up until 1999.

The three main types of asbestos that have been used commercially are:

- Crocidolite (blue)
- Amosite (brown)
- Chrysotile (white)

The type of asbestos cannot be identified just by its colour, but requires microscopic examination in a laboratory.

Some products have one type of asbestos in them while others have mixtures of two or more. All are dangerous, but blue and brown asbestos are known to be more dangerous than white. There has recently been controversy as to whether white asbestos is safe, though this is disputed by the HSE, on the basis of evidence from the International Agency for Research on Cancer that it is considered to be a category 1 human carcinogen. In any case, there is good reason for adopting a precautionary approach with chrysotile, as it often contains small quantities of the other forms.

Surveys

Whoever has control of a building has a duty to manage the asbestos in their buildings. This starts with taking reasonable steps to find out if there are materials containing asbestos in the premises and, if so, how much, where they are and what condition they are in. This can – but does not have to – involve a survey. A survey can be:

- Type 1 – presumptive. This is to locate materials assumed to contain asbestos and note what condition they are in. No sampling is done.
- Type 2 – sampling. This is the same as type 1 but samples are taken and analysed to confirm whether asbestos is present.
- Type 3 – full access. This involves getting full access to all parts of the building, using destructive inspection if necessary. This type is usually used just before demolition or major refurbishment.

The results of all types of survey, including information on the accessibility, condition and surface treatment of any presumed or known ACMs,



should be recorded and the information provided to anyone who may work on, or disturb, these materials. Safety representatives are entitled to this information.

Consulting others, such as architects, employees or safety representatives, may provide you with more information. If the age of the building or the information you obtain provide strong evidence that no ACMs are present, then you need only to record why this evidence indicates there is no asbestos present.

If there is doubt whether asbestos is present, it shall be presumed that it is present and also that it is not restricted to white asbestos, and the regulations shall apply accordingly.

Assessment

The Control of Asbestos at Work Regulations 2006 state:

An employer shall not carry out work which is liable to expose his employees to asbestos unless he has:

made a suitable and sufficient assessment of the risk created by that exposure to the health of those employees and of the steps that need to be taken to meet the requirements of these Regulations;

recorded the significant findings of that risk assessment as soon as is practicable after the risk assessment is made; and

implemented the steps referred to in sub-paragraph (a).

Where asbestos is concerned, employers must assess the risk of exposure and then do all that is reasonably practicable to avoid the risk, thereby ensuring the health and safety of employees and others. If an 'asbestos incident' occurs, all employees should be informed in writing about their potential exposure and the possible risks to health; and the fact of their exposure must be recorded by the employer.

Requirements for Removal

Provided asbestos is well contained in structural elements (e.g. cement, tiles), and is left undisturbed and not subject to drilling, sawing or unscrupulous demolition, the risk is small compared to the risk of removing it. Experience in other countries has shown that systematic removal measures are very expensive, with no objective improvement in health. France and the USA adopted a management and control strategy and concluded that improper removal might cause a problem where none existed.

Though the HSE is stressing that in many cases asbestos can be retained and managed, some employers take the approach that eventually it will have to be removed when its condition deteriorates, so it might as well be removed immediately thereby avoiding wasted money on maintenance in the interim. Specialist contractors might also advocate the same strategy as that will be financially advantageous to them in the short term.

Where asbestos is to be removed, then a number of controls apply covering notification, licensing of operators and procedures.

Licensing

Most asbestos removal work must be undertaken by a licensed contractor but any decision on whether particular work is licensable is based on the risk. Work is only exempt from licensing if:

- the exposure of employees to asbestos fibres is sporadic and of low intensity (but exposure cannot be considered to be sporadic and of low intensity if the concentration of asbestos in the air is liable to exceed 0.6 fibres per cm³ measured over 10 minutes); and
- it is clear from the risk assessment that the exposure of any employee to asbestos will not exceed the control limit; and
- the work involves:
 - short, non-continuous maintenance activities. Work can only be considered as short, non-continuous maintenance activities if any one person carries out work with these materials for less than one hour in a seven-day period. The total time spent by all workers on the work should not exceed a total of two hours, including time spent on constructing enclosures and cleaning.
 - removal of materials in which the asbestos fibres are firmly linked in a matrix, such as asbestos cement, textured decorative coatings, vinyl floor tiles, roofing felt and gaskets.
 - encapsulation or sealing of asbestos-containing materials which are in good condition, or
 - air monitoring and control, and the collection and analysis of samples to find out if a specific material contains asbestos.

Unless work meets one of the exemptions above, then it must be undertaken by a contractor licenced by the HSE Licensing Unit.

Notification

If the work is licensable, at least 14 days' notice to the enforcing authority (or such shorter time as the enforcing authority may agree) is to be given. The notification (as per Schedule I of the 2006 Regulations) should contain:

- The name of the notifier and the address and telephone number of his usual place of business.
- Location of the work site.
- A description of the type of asbestos to be used or handled (crocidolite, amosite, chrysotile or other).
- The maximum quantity of asbestos to be held at any one time on the premises at which the work is to take place.
- The activities or processes involved.
- The number of workers involved.
- Measures taken to limit the exposure of employees to asbestos.
- The date of commencement of the work activity and its expected duration.

Plan of Work

No work with asbestos shall be undertaken without a written plan of work detailing how that work is to be carried out. The plan shall be kept at the premises at which the work is being carried out for such time as that work continues. In cases of final demolition or major refurbishment of premises, the plan will usually require that asbestos shall be removed before any other major works begin.

The Regulations require the measures for managing the risk are to be specified in the written plan, including:

- monitoring the condition of any asbestos or any substance containing or suspected of containing asbestos;
- ensuring any asbestos or any such substance is properly maintained or where necessary safely removed; and
- ensuring that information about the location and condition of any asbestos or any such substance is provided to every person liable to disturb it, and made available to the emergency services.

The measures specified in the plan must be implemented and recorded.

The plan is to be reviewed and revised at regular intervals, and forthwith if there is reason to suspect that the plan is no longer valid, or there has been a significant change in the premises to which the plan relates.

Information, Instruction and Training

The Regulations require mandatory training for anyone liable to be exposed to asbestos fibres at work (see regulation 10). This includes maintenance workers and others who may come into contact with or who may disturb asbestos (e.g. cable installers) as well as those involved in asbestos removal work.

Every employer shall ensure that adequate information, instruction and training is given at regular intervals to those of his employees who are or who are liable to be exposed to asbestos, or who supervise such employees, so that they are aware of:

- (i) the properties of asbestos and its effects on health, including its interaction with smoking,
- (ii) the types of products or materials likely to contain asbestos,
- (iii) the operations which could result in asbestos exposure and the importance of preventive controls to minimise exposure,
- (iv) safe work practices, control measures, and protective equipment,
- (v) the purpose, choice, limitations, proper use and maintenance of respiratory protective equipment,
- (vi) emergency procedures,
- (vii) hygiene requirements,
- (viii) decontamination procedures,
- (ix) waste handling procedures,
- (x) medical examination requirements, and
- (xi) the control limit and the need for air monitoring,

Employees should be made aware of the significant findings of the risk assessment, and the results of any air monitoring carried out, with an explanation of the findings.

Control Measures

When work with asbestos or which may disturb asbestos is being carried out, the Asbestos Regulations require employers and the self-employed to prevent exposure to asbestos fibres. Where this



is not reasonably practicable, they must make sure that exposure is kept as low as reasonably practicable by measures other than the use of respiratory protective equipment, and ensure that the number of his employees who are exposed to asbestos at any one time is as low as is reasonably practicable. The spread of asbestos must be prevented. The Regulations specify the work methods and controls that should be used to prevent exposure and spread.

The measures shall include, in order of priority:

- (a) the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials in order to avoid or minimise the release of asbestos; and
- (b) the control of exposure at source, including adequate ventilation systems and appropriate organisational measures, and the employer shall so far as is reasonably practicable provide the employees concerned with suitable respiratory protective equipment in addition to the measures required by sub-paragraphs (a) and (b).

Worker exposure must be below the airborne exposure limit (Control Limit). The Asbestos Regulations have a single Control Limit for all types of asbestos of 0.1 fibres per cm³. A Control Limit is a maximum concentration of asbestos fibres in the air (averaged over any continuous 4 hour period) that must not be exceeded.

In addition, short term exposures must be strictly controlled and worker exposure should not exceed 0.6 fibres per cm³ of air averaged over any continuous 10 minute period using respiratory protective equipment if exposure cannot be reduced sufficiently using other means.

Work methods that control the release of fibres such as those detailed in the *Asbestos Essentials* task sheets for non-licensed work should be used.

Typical control measures for removing asbestos include:

- Restricting access to the area.
- Enclose the work area and keep it under negative pressure, testing the sealed area for leaks.
- Use controlled wet removal methods (e.g. water injection, damping down the surface to be worked on). (Dry removal processes are unacceptable.)

- Use a wrap-and-cut method or glove bag technique (a method of removing asbestos from pipes, ducts, valves, joints and other non-planar surfaces).
- Where appropriate use measures which control the fibres at source, for instance, by using vacuuming equipment directly attached to tools. Failing this, use equipment hand-held by a second employee right next to the source emitting the fibres (known as 'shadow vacuuming').
- Thoroughly cleaning the area and obtaining a clean air certificate after a successful air test upon completion of the work.
- Providing a decontamination unit.

A clearance certificate for re-occupation may only be issued by a body accredited to do so. At the moment, such accreditation can only be provided by the United Kingdom Accreditation Service (UKAS).

Respiratory Equipment

Respiratory protective equipment is an important part of the control regime but it must not be the sole measure used to reduce exposure and should only be used to supplement other measures.

Suitable respiratory protective equipment should be provided for employees if asbestos fibres in the air have been reduced to as low as is reasonably practicable by using control methods at source, but exposures are still liable to be above the control limits.

The respiratory equipment provided must be marked with a 'CE' symbol and matched to:

- The exposure concentrations (expected or measured).
- The job.
- The wearer.
- Factors related to the working environment.

Respiratory protective equipment must be examined and tested at suitable intervals by a competent person, and a suitable record kept for 5 years. Respirator testing involves daily checks, monthly checks, and full performance checks every 6 months. Operator checks would involve fit testing to see that the correct size and model are used to provide an adequate face seal.

Protective Clothing

The **Control of Asbestos at Work Regulations 2006** require the provision of adequate and suitable protective clothing for employees exposed or liable to be exposed to asbestos, unless no significant quantity of asbestos is liable to be deposited on the clothes of the employee while he is at work.

When selecting and using protective clothing for work with asbestos, all employers must ensure they comply with the **Personal Protective Equipment Regulations 2002** and the **Personal Protective Equipment at Work Regulations 1992** (as amended). In general, these regulations require that personal protective equipment (PPE) including clothing must be provided when an employee is exposed to a risk, and that the PPE must be appropriate to the risks involved. It must fit correctly, be compatible (i.e. the wearing of a hard hat must not interfere with the correct fit of a respirator), be in good repair or replaced as necessary. Adequate storage facilities must be provided. Employees must know the risks and be trained in the use of the personal protective equipment. PPE supplied/purchased for use at work must carry the 'CE' mark of approval.

You should note that protective clothing used in an asbestos environment will not prevent the body or underclothes from being contaminated with asbestos fibres, or remove the necessity to cleanse and decontaminate the body after the protective clothing is removed.

Protective clothing normally required in asbestos removal/encapsulation operations will depend on the risk assessment and will include:

- Coveralls – these must have an elasticated hood and elasticated cuffs at the wrists and ankles. There should be no external pockets. Two types of coverall are used:
 - Disposable coveralls - suitable for the majority of asbestos removal tasks.
 - Non-disposable coveralls.
- Head protection – this should be to EN 397 for hard hats and EN 812 for bump caps. When worn, it must not affect the correct fit of the respirator, and provide protection to operatives from other risks.
- Footwear – overshoes or safety/Wellington boots (ensure the trouser legs of the coveralls are outside the boots). Any footwear used within the enclosure must be easily decontaminated.

- Underclothing/socks/gloves – use disposable clothing.

The methods of decontamination might include a safe system of work, positive pressure respirators, and transit procedures. Transit footwear must be appropriate to the site conditions and, if used previously in the enclosure, properly decontaminated. Working coveralls are for wearing in the enclosure, and transit coveralls are for transit between the enclosure and the hygiene facility.

Laundering

Safe arrangements must be made for the laundering of all reusable protective clothing.

However, it may prove difficult to locate suitable commercial laundries as recent research has shown that few commercial laundries will launder asbestos clothing/towels.

No contaminated clothing should be taken home, including underclothing. Safe arrangements must be made to transfer and launder contaminated clothing in dissolvable bags which are suitably identified by an appropriate warning label. Cases of residual asbestos have been found even after laundering possibly due to ineffective decontamination procedures. However, laundering was effective in removing asbestos from coveralls.

Contaminated disposable clothing should be treated as asbestos waste and dealt with appropriately (see later).

Air Monitoring

Air sampling is used for **compliance** sampling (i.e. within control or action limits), **background** sampling prior to work commencing, **leak** sampling to ensure adjacent or adjoining areas are not above background levels, and **clearance** sampling after asbestos removal and cleaning has taken place prior to handover to occupiers.

Sampling should be carried out by trained staff in compliance with the Approved Code of Practice (5th edition).

Examination of samples by polarised light microscopy will usually indicate the presence of asbestos and its type. It is not possible to identify the type of asbestos by its visual colour alone. The examinations should be undertaken by suitably trained and accredited analysts from laboratories.

Sampling should take place while activity in the area is representative of that occurring in normal occupancy or use, and should be undertaken by specialists in compliance with HSE Guidance Note EH 10, *Asbestos: Exposure Limits and Measurement of Airborne Dust Concentrations*, and the approved

methods outlined in MDHS 39/4, *Asbestos Fibre in Air: Sampling and Evaluation by Phase contrast Microscopy (PCM)*

Employers must monitor the exposure of their employees to asbestos by measurement of asbestos fibres present in the air at regular intervals. The method is set out in the publication *Determination of airborne fibre concentrations. A recommended method, by phase-contrast optical microscopy (membrane filter method)*, WHO Geneva 1997 (ISBN 92 4 154496 1).

An individual employee may have access to his personal monitoring record, copies of which are provided to the HSE.

Dutyholders may choose to employ an asbestos surveyor/inspector to carry out the assessment of whether asbestos is present in their premises. The accreditation schemes are run by the United Kingdom Accreditation Service (UKAS).

Medical Surveillance

Every employer shall ensure that for each of his employees who is exposed to asbestos:

- A health record is available for at least 40 years from the date of the last entry made in it.
- The record is maintained (unless the exposure of that employee does not exceed the action level).
- The employee is under adequate medical surveillance by a relevant doctor (unless the exposure of that employee does not exceed the action level).

The medical surveillance required includes a specific examination of the chest and:

- A medical examination not more than 2 years before the beginning of such exposure.
- Periodic medical examinations at intervals of not more than 2 years (or such shorter time as the relevant doctor may require while such exposure continues).
- A certificate is issued to the employer and employee stating that the employee has been so examined and the employer must keep that certificate or a copy for at least 4 years from the date on which it was issued.

Requirements for Disposal

Any waste containing asbestos is classed as a controlled waste under the **Environmental Protection Act (EPA) 1990** and, dependent upon its source and properties, may also be classified as hazardous waste, under the **Hazardous Waste (England and Wales) Regulation 2005**. Under these regulations, all movements of hazardous waste have to be tracked, by means of a consignment note system, until it reaches a suitable waste management facility. Under the **Waste Management Licensing Regulations 1994**, all controlled waste – including asbestos waste – must be kept, treated or disposed of at a site licensed to accept such waste. Although in some circumstances, e.g. for some recovery operations, sites do not need to be licensed, a waste management licence is required for all sites wishing to handle asbestos waste. The licence will indicate that asbestos waste can be handled, and also set out terms and conditions to prevent harm to human health and pollution to the environment. All asbestos is disposed of by landfill. The **Landfill (England and Wales) Regulations 2002** allow asbestos, depending upon its categorisation, to be accepted at hazardous waste sites and also at non-hazardous waste, sites in separate cells. Those sites that can accept asbestos operate special procedures to ensure safe disposal.

Every employer who undertakes work with asbestos must ensure that raw asbestos or waste which contains asbestos is not stored; received into or despatched from any place of work; or distributed within any place of work, except in a totally enclosed distribution system, unless it is in a sealed container clearly marked showing that it contains asbestos. Raw asbestos must be labelled in accordance with the provisions of the appropriate regulations above.

The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order 2005 came into force on 1st October 2006. Information on this regulation can be found at <http://www.rrc.co.uk/FireBooklet.aspx>. We have also developed a podcast on this regulation which can be downloaded from www.rrc.co.uk/Podcasts.

The Control of Noise at Work Regulations 2005 – A Reminder

The Control of Noise at Work Regulations 2005 (CNAWR) entered into force a little over a year ago. Here we remind students of some of the key points of that legislation.

CNAWR replaced the existing Noise at Work Regulations 1989 for all industries in the UK except for the music and entertainment industries, which have until April 2008 to comply.

The CNAWR provide a framework for the control of noise at work and specify lower and upper exposure action values (at which the employer has to take specific action) and exposure limit values (which must not be exceeded). Action values do not take account of any personal hearing protection provided whereas the limit values do. Both the action values and limit values are expressed by reference to averaged "daily or weekly personal noise exposure" (written as $L_{EP,d}$ and $L_{EP,w}$, respectively) and also by reference to peak sound pressure (maximum noise). Use of the weekly averaging, instead of the daily one, is permissible in cases where there is marked day-to-day variation in exposure.

As an example, we'll look at the **upper exposure action value**; this is defined in the Regulations as an $L_{EP,d}$ or $L_{EP,w}$ of 85 dB(A) and a peak sound pressure of 137 dB (C). An $L_{EP,d}$ of 85 dB(A) is equivalent to exposure to a continuous noise, at an unvarying level of 85 dB(A), occurring for eight hours. Exposures with different combinations of sound level and duration can also produce an $L_{EP,d}$ of 85 dB(A). You can see this illustrated in the following table.

Noise Exposure

Sound Level dB(A)	Exposure Equivalent to 85 dB(A) $L_{EP,d}$
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 mins
100	15 mins
103	7.5 mins

Noise surveys also comprise an essential component of the assessment that is required by the CNAWR.

Let's take a closer look at the legal requirements in respect of these action values and limit values.

Lower Exposure Action Values: 80 dB(A) $L_{EP,d}$ / $L_{EP,w}$ or 135 dB(C)

Where it is likely that a lower exposure action value may be exceeded, employers must carry out a suitable and sufficient risk assessment. At or above this level employees must be provided with information about the likely noise exposure and the associated risk to hearing, the control measures in place to reduce exposure, hearing protection and health surveillance (hearing tests).

Upper Exposure Action Values: 85 dB(A) $L_{EP,d}$ / $L_{EP,w}$ or 137 dB(C)

At or above this level the employer must reduce exposure to as low a level as is reasonably practicable by establishing and implementing a programme of organisational and technical measures. The provision of hearing protectors is a last resort and is only acceptable when other methods of reducing exposure are not reasonably practicable.

Health surveillance (hearing checks) must be provided for all employees likely to be exposed regularly above the upper exposure action value.

Exposure Limit Values: 87 dB(A) $L_{EP,d}$ / $L_{EP,w}$ or 140 dB(C)

These limits must not be exceeded. However, if an exposure limit value is exceeded, the employer must investigate the reason for the occurrence and identify and implement actions to ensure that it does not occur again.

The following table summarises the duties imposed in respect of each of the exposure action values defined within the CNAWR.

Action Required by the Control of Noise at Work Regulations 2005

Noise Exposure L_{EPd} / L_{EPw}	Action Required	
Lower Exposure Action Value 80 dB(A) or, 135 dB(C)	1.	Carry out a risk assessment to assess likely exposure and determine control measures.
	2.	Train workers on the risks of noise exposure and how to minimise them.
	3.	Make ear protectors available.
	4.	Provide regular audiometric testing for any employees who are particularly susceptible to noise-induced hearing loss.
Upper Exposure Action Value 85 dB(A) or, 137 dB(C)	1.	Reduce exposure to as low a level as is reasonably practicable by implementing appropriate control measures.
	2.	Ensure that ear protectors are provided and worn.
	3.	Designate Hearing Protection Zones.
	4.	Provide regular audiometric testing.
Exposure Limit Value 87 dB(A) or, 140 dB(C)	Not to be exceeded. If an exposure limit value is exceeded, the employer must identify the cause of the occurrence and put measures in place to ensure that it does not reoccur	