



**YOUR SAFETY
IS MY SAFETY**



Guidance for Contractors

in Occupational Health and Safety



INVESTORS
IN PEOPLE | Gold

Welcome to BAM Nuttall

Everybody Home Safe Every Day

Safety is unconditional. It comes before programme or profit. Before anything you can think of. After a hard day's work, we all want to return home safely again. Get up healthy the next day and start a new working day. A safe working day. Safety is something we work on together. That's why we make all our employees aware of their responsibility. Not just the 20,000 people on BAM's payroll, but also all our partners, suppliers and the clients we work with on a daily basis. We take responsibility for ourselves and for each other and towards society at large. On site, on the road and at the office.

Below are some simple rules which lead to a safe workplace for us all. We expect you to respect these rules and any other site specific rules you are given on induction – thank you.



I never enter an exclusion zone



I do not work with installations or cables that are charged, unless I am authorised to do so



I understand my job, and I am aware of the associated risks. If anything is unclear, I will ask for additional information



I exclusively give safe instructions and exclusively follow safe instructions



I call other people to account about unsafe behaviour, and I accept that others can also call me to account about unsafe behaviour



I do not work when I am under the influence of drugs, medication or alcohol



I only start with my work after I have been instructed correctly (formally). I follow these instructions



I always use the designated access routes and keep them clear at all times



I work with approved equipment and only if I am authorised to use it



I always use the welfare facilities provided and keep them clean and tidy



I use my compulsory personal protection equipment



I keep my workplace clean, safe and tidy



**YOUR SAFETY
IS MY SAFETY**

Guidance for contractors in health and safety

Health

Your health is important to us. Our aim is to that you work in an environment that does not damage your health. This allows you to be healthy in all areas of your life.

We will work with you to ensure that activities on site are carried out in a manner that does not compromise the health of anyone involved. We will apply the 'Keys to health' on our projects when assessing the environment and activities undertaken.



HAVs – it's in your hands



Clear the air – keep the dust down



Stay safe in the sun and cover up



The lower the better



Lifting loads? - Weigh it up



Hazardous materials – COSHH and control



Rest is best



Asbestos - Do not disturb



gLOVE your hands



Weils - Keep it clean



Lead on Lead – follow the hygiene rules



Be screen savvy

Introduction

The purpose of this booklet is to promote the occupational health and safety of all contractors employed on BAM Nuttall premises and sites. It is also intended as a convenient source of basic occupational health and safety information for BAM Nuttall site staff. It sets out the general requirements for occupational health and safety and the precautions to avoid danger from specific hazards. The hazards are those most frequently met on construction sites and which are the most common causes of incidents and ill health.

The booklet is provided to help you comply with the law and with good occupational health and safety practice. However, you cannot use it as evidence of compliance. You must be satisfied about the law for yourself.

Much of the guidance is taken from construction summary sheets which are available free of charge from HSE. For more detailed guidance you should consult HSG150 'Health and safety in construction' published by HSE Books.

It is the board's intent through visible leadership, continual improvement and people's behaviour, to strive for levels of performance where incidents are eliminated, health is improved and the environment is enhanced. This expectation of what future will look like is known as 'Beyond Zero'.



P J Cullen
Director, Health and Safety

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Success comes from all teams working together. Because when we work together and build relationships our unique combination of talents and know-how maximises our team performance. This guidance comprises a single common approach – providing consistency and a template for success in partnership with our supply chain.

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1.0 Contractors' responsibilities

All contractors working on BAM Nuttall premises or on any site where BAM Nuttall has been appointed principal contractor will at all times comply with BAM Nuttall rules and procedures.

They will in particular:

- ensure that their employees are provided with the appropriate personal protective equipment and that it is used as directed. Helmet, full hi-vis (upper and lower body), suitable gloves, safety glasses and protective footwear are mandatory
- provide the agent with a copy of their health and safety policy and all risk assessments, procedures and method statements relating to the work to be undertaken
- ensure that their activities are conducted safely, without risk to health, and in accordance with all relevant health and safety legislation
- provide trained and competent operatives and ensure their attendance at any training course arranged by BAM Nuttall
- co-operate with BAM Nuttall health and safety advisors and workplace health advisors during inspections and audits
- conform to the requirements contained in this booklet

In order to reach our goal of Beyond Zero it is important that we all understand and are accountable for our actions. To reinforce this, a visible disciplinary process is in place specifically for health and safety breaches.

The agent will give you further details on site and all personnel will be briefed at induction.

In brief summary:

Anyone can highlight a breach preferably by informing their line manager. Supervisors and the agent record and address breaches as part of the ongoing monitoring of activities.

Action notices are raised by the relevant line manager at the time of incident or retrospectively following receipt of an observation card (subject to verification). The agent decides on the immediate action to be taken then the disciplinary severity level to be applied.

An action notice is then issued detailing the discipline severity level and actions required.

There are four disciplinary severity levels:

- a verbal warning is given to the non-compliant person(s)
- a first amber action notice is issued to the non-compliant person(s) - site procedures are reviewed and a toolbox talk held on the particular issue – if appropriate the toolbox talk is conducted by the non-compliant person

- a second amber action notice to the non-compliant person(s) – the non-compliant person is asked to leave the site for the day to reflect on the issue. They are re-inducted prior to recommencing work
- a red action notice is issued to the non-compliant person(s) – this is for serious offences or as a result of multiple amber notices

For a BAM Nuttall employee the company disciplinary procedure will be engaged.

For labour-only or subcontractor employees the employee is asked to leave the site permanently.

Appeals can be made to the agent or a senior manager of BAM Nuttall within 3 days of notice being issued.

2.0 Legislation

All work activities are covered by health and safety law. Not all of it applies to everything you do, but you need to know all the main provisions.

2.1 The Health and Safety at Work Act (HSWA)

The HSWA applies to everybody at work. It requires employers to ensure so far as is reasonably practicable the health and safety of their employees, other people at work and members of the public who may be affected by their work.

You should have a health and safety policy, and if you employ five or more people it must be in writing.

If you are self employed, you should ensure, so far as is reasonably practicable, your own health and safety and make sure that your work does not put any other person at risk.

Employees have a duty to co-operate with their employers on occupational health and safety matters and not do anything that puts them or others at risk. Employees should be supervised, trained, informed and instructed in their duties.

2.2 The Management of Health and Safety at Work Regulations (MHSW)

The MHSW regulations apply to everyone at work. They require employers to:

- make risk assessments
- plan, organise, monitor and review their work
- have access to competent occupational health and safety advice
- make arrangements to deal with serious or imminent danger
- provide occupational health and safety training and information to employees
- co-operate in occupational health and safety matters with others who share the workplace

2.2.1 Risk assessment

Employers and the self employed must identify the hazards involved in their work, consider the likelihood of any harm arising and decide on adequate precautions. This is called risk assessment and is the basis of all occupational health and safety planning.

- look for the hazards. Consider the work, how and where it is to be done and what equipment and materials are to be used
- decide who might be harmed and how. Consider everyone who could be affected by your work: employees, the self employed, other contractors, site visitors and members of the public
- evaluate the risks and decide on action. Consider whether someone is likely to be harmed. If there is a risk of harm:
 - can the hazard be removed completely?
 - if not, can it be controlled?
 - can measures be taken which will protect the whole workforce?
- record the findings. Employers with five or more employees must record the significant findings of their assessment. Information about significant risks and the steps taken to control the risks must be passed on to workers even when less than five people are employed
- review the findings. Reviews take account of unusual conditions and changes in the way the job is done. They also allow you to learn from experience. You do not have to make a new assessment for every job, only if there are major changes



2.2.2 Additional requirements

Health and safety training and advice

You must appoint someone to be responsible for your occupational health and safety arrangements. This will make sure that occupational health and safety gets proper attention.

The person appointed may need additional training in occupational health and safety and must have your full support. All managers are required to have passed an accredited five-day SMSTS course.

All workers must be trained in safe working practices. You cannot rely on them to pick up safety on the job from their workmates, they might simply be learning someone else's bad habits. You need to check their competence before putting them to work and provide training when it is needed. All operatives and gangers must have the CITB's Site Safety Plus health and safety awareness training to work on BAM Nuttall sites.

BAM Nuttall target the full workforce carrying a valid CSCS card for their particular role.

The requirement for any person to hold a valid CPCS card (where that equipment or role is covered under the CPCS scheme) for item of equipment they are using or task they are performing, together with an up to date log book, is mandatory.

The use of any other scheme card as proof of competence, for non CPCS category plant, will only be by prior agreement with the agent following confirmation with the People Development team that the alternative scheme meets the required standard.

Site supervisors

Supervisors control the way in which work is done on site. This means they can and should ensure that work is safe. They also have an important role in passing on information to workers on site eg by giving toolbox talks.

The contractor will demonstrate to the agent how they have assessed the competence of all personnel that are deemed to be supervisors prior to those individuals commencement on site. All supervisors are required to have successfully completed a Site Supervisors Safety Training Scheme (SSSTS) course.

The contractor will ensure that their works are adequately supervised at all times.

The contractor will attend the site daily briefings and discuss with the site team any operations they will be carrying out that may affect others on site and how these will be planned and managed safely.

Monitoring occupational health and safety

You need to make sure that everyone is fulfilling their occupational health and safety duties.

Checks need to be made from time to time to make sure that what should be happening on site is actually being carried out. In the BAM Nuttall safety system this is known as compliance monitoring and a programme of compliance monitoring is required with each method statement. If the same problems keep recurring, find out why. Keeping a record of accidents and first aid treatments will help to identify trends.

Occupational Health and safety method statements

For high risk work (eg steel and formwork erection or demolition) you will be required to prepare a method statement.

The BAM Nuttall system requires the use of activity plans. These are essentially method statements but for a specific part of a larger task and they require the inclusion of some specific details. Contractors are not obliged to use the activity plan format however, no method statement will be authorised by the agent as suitable for the task without these specific details being addressed within that document. Further details will be proved by the agent.

This will include any risk assessments you have made. The method statement can be used to provide your employees with information on how the work is to be done and the precautions to be taken.

All method statements, activity plans, lift plans or similar that are required to be proposed to the agent for comment shall be submitted as per the timescales agreed with the agent.

2.3 The Construction (Design and Management) Regulations (CDM)

These regulations require that occupational health and safety is managed throughout all stages of a project, from conception, design and planning through to site work and subsequent maintenance and repair. The regulations place duties on you as a contractor.

Contractors and the workers under their control are those most at risk of injury and ill health. They influence the way work is carried out to secure their own occupational health and safety and that of others affected. They have an important role in planning, managing and monitoring the work (in liaison with the principal contractor, where appropriate) to ensure risks are properly controlled. The key to this is the proper coordination of the work, underpinned by good communication and cooperation with others involved.

The main duty on contractors is to plan, manage and monitor construction work carried out either by the contractor or by workers under the contractor's control, to ensure that, so far as is reasonably practicable, it is carried out without risks to health and safety.

A contractor must comply with:

- any directions given by the principal contractor or the principal designer; and
- the parts of the construction phase plan – within BAM Nuttall this is referred to as the Project Execution Plan (PEP) – that are relevant to that contractor's work on the project. The contractor should also liaise with the principal contractor to pass on their views on the effectiveness of the PEP in managing the risks

A contractor must not employ or appoint a person to work on a construction site unless that person has, or is in the process of obtaining, the necessary skills, knowledge, training

and experience to carry out the tasks allocated to that person in a manner that secures the occupational health and safety of any person working on the construction site.

A contractor must provide each worker under their control with appropriate supervision, instructions and information so that construction work can be carried out, so far as is reasonably practicable, without risks to occupational health and safety. Workers should always know how to get supervisory help, even when a supervisor is not present.

The information provided must include:

- a suitable site induction, where not already provided by the principal contractor
- the procedures to be followed in the event of serious and imminent danger to health and safety
- information on risks to occupational health and safety— identified by the risk assessment, or arising out of the conduct of another contractor’s undertaking and of which the contractor in control of the worker ought reasonably to be aware
- any other information necessary to enable the worker to comply with the relevant statutory provisions

A contractor will coordinate the planning, management and monitoring of their own work with that of the principal contractor and other contractors, and where appropriate the principal designer to ensure it is consistent with the project-wide arrangements. Such coordination could involve regular progress meetings with other duty holders to ensure that the contractor’s arrangements for planning, managing and monitoring their own work can feed into, and remain consistent with, the project-wide arrangements.

The contractor will monitor their work to ensure that the occupational health and safety precautions are appropriate, remain in place and are followed in practice. This includes using a mix of measures to check performance and taking prompt action when issues arise. The contractor should provide the principal contractor with any relevant information that stems from their own monitoring so the principal contractor can monitor the management of health and safety at a project-wide level.

All contractors should co-operate with and provide the principal contractor with occupational health and safety information (such as risk assessments and method statements). They also have a duty to co-operate with other contractors on site.

You will be given information from the PEP before you start work.

You need to inform your workers of the hazards on site and the precautions to be taken. You should also liaise with the principal contractor to pass on their views on the effectiveness of the PEP in managing the risks.

If you intend sub-letting work, you will be required to confirm that those who are to do the work are competent and have the resources to do it safely.

Employees

Your employees also have occupational health and safety duties, and they should be trained to know what they are:

- co-operate with their employers on occupational health and safety matters
- follow instructions given to them by supervisors
- follow site rules and any other rules which may apply to their particular job
- use the protective equipment provided
- report any defects in equipment to their supervisor
- take care of their own health and safety as well as that of others who may be affected by their work

3.0 Planning

The key to achieving a safe site is to make sure that occupational health and safety is planned, organised, controlled, monitored and reviewed. Everyone who controls site work has occupational health and safety responsibilities as set out in the legislation (Section 2).

A health and safety plan is prepared for every project, and you must take into account its contents when submitting your tender.

Any supplier from whom you buy materials or hire equipment must provide occupational health and safety information. Make sure that you read and pass on the information to your workers.

Decide what plant you will need and check that it is suitable. Operators will need appropriate competence cards before they are allowed to use the plant on site.

Only CPCS will be accepted as proof of competence for any item of mobile plant that falls within a CPCS category. ALLMI is only accepted for lorry loader duties and delivery drivers to site, where the driver is not subsequently involved in construction works.

The use of any other scheme card as proof of competence, for non CPCS category plant, will only be by prior agreement with the agent following confirmation with the People Development team that the alternative scheme meets the required standard.

It is important that those who supervise, operate, maintain and clean plant and equipment understand the manufacturer's safety warnings and guidance. These are generally found in the instruction manual for the item in use. The contractor shall ensure that these safety warnings and guidances are recorded in the risk assessment. The contractor ensures any worker using, maintaining or cleaning plant or equipment has been trained to do so, is familiar with the safety warnings and guidance and has access to the guidance should they need to refer back to it during the task.

The NOCN Certificate for 'Safe Use of Cut-Off Saws (including Abrasive Wheels) is the only cut off saw and abrasive wheel training approved on BAM Nuttall sites.

3.1 Organisation

Make sure that those who are to supervise your work are adequately trained and experienced.

When you take on workers, find out what training they have received and ask for certificates of training. Check their ability before putting them to work. Have arrangements in place if any workers do not speak English, to allow adequate levels of communication.

3.2 Facilities for common use

Access	Make sure that the rules relating to access onto and around the site are observed, eg separation of vehicles from pedestrians.
Boundaries	These are fenced to prevent unauthorised access to site, especially by children. Make sure that your work does not affect site security.
Welfare	Toilets, washing facilities, eating facilities and accommodation for clothing will normally be provided. Make sure that they are kept clean and tidy.
Fire precautions	These are described in the health and safety plan. Make sure that your employees are familiar with the arrangements.
Falling materials	Toe boards are required on working platforms. Fans or hoardings may also be needed to protect employees and the public from falling materials.
Tidiness	All access routes should be kept free of tripping hazards such as trailing leads and brick bands. Remove nails from loose timber to prevent foot injuries. Clear paper, timber offcuts and other flammable materials to reduce the risk of fire.
Storage	Use the storage areas provided or set up safe storage areas for plant, materials and flammable or hazardous substances. Do not store materials where they obstruct access routes or where they would interfere with emergency escapes. No storage will be allowed on the roof of cabins or containers.
Site rules	Site rules are made which cover for example safety helmets, safety footwear, gloves, eye protection, site transport, fire prevention, site tidiness, hearing protection and permit to work systems. Make sure that everybody knows and follows the rules.
First aid	This can save lives, reduce pain and help an injured person to recover more quickly. You may be asked to provide the basic requirements, ie: <ul style="list-style-type: none">• a first aid box with enough equipment to cope with the number of workers you have on site

- an appointed person who knows how to contact the accident and emergency services
- information telling workers the name of the appointed person and where to find him

Otherwise, shared welfare arrangements will be made whereby BAM Nuttall will provide for first aid.

3.3 Reporting incidents

You must report to HSE any of the following incidents which happen to your employees. All incidents must also be reported to the site manager.

- specified injuries and fatal incidents must be reported immediately to the HSE by telephone
- less serious injuries where the injured person is unfit to do their normal job for more than seven consecutive days must be reported to the HSE via on-line within ten days
- if there is a dangerous occurrence, for example scaffold or falsework collapse, failure of a crane or contact with overhead lines, you must report it immediately to the site manager. They will provide the details in writing to the HSE via on-line
- if one of your workers suffers from a specified disease associated with their work, you must report this to the HSE on form F2508A immediately
- all incidents reported to the HSE will be investigated by the contractor and a copy of their preliminary report submitted to the agent within 7 days with the final report to follow when the investigation is complete and remedial actions agreed upon
- BAM Nuttall define any incident where a individual does not attend their next normal working shift following an injury at work as a lost time injury (LTI). Any incident that results in an individual breaking a finger or toe regardless of whether or not they lose time is also defined as an LTI. All LTI are to be reported to the agent as soon as the contractor becomes aware of them and all LTI are subject to incident investigation with a preliminary report issued to the agent within 7 days of the incident
- all near misses and accident book entries are to be reported to the agent within 24 hours of occurrence. The contractor will co-operate with the agent to investigate and report on any such incident that the agent deems necessary

4.0 Safety

Most of the hazards in construction are well known. This section identifies the main hazards and gives advice on the precautions you should take. Further guidance may be obtained from GE700 Construction Site Safety.

4.1 Work at height

Falls from height are the greatest single cause of accidental death on construction sites. Most of the incidents could have been prevented if the right equipment had been provided and properly used. If there is a possibility of any person falling a distance liable to cause personal injury from the edge of any working place or access route guardrails or other suitable barriers must be provided.

Many workers are killed or badly injured by falls at unprotected openings such as open joisting or holes in floors. Such openings must either be fenced off or covered over. Covers should either be secured in place or marked with a warning sign.

Falls from vehicles, as with any other work at height a risk assessment is required. As part of the identified controls there are basic steps that should be taken to reduce the chance of people falling and being injured.

- avoid the need to work at height if at all possible (eg unnecessary climbing on loads)
- where work at height cannot be avoided, take steps to prevent falls (consider provision of edge protection, loading bays or steps for access to vehicles)
- if there are any remaining risks of falls, take steps to minimize them by ensuring that those involved are briefed on the hazards and appropriate preventative measures

Prevent falls by following these simple rules:

- before you start work, select suitable access equipment, check that it is in good condition and that those who are to assemble it are trained
- check that there is enough clearance from overhead lines
- ensure platforms are fitted with guardrails and toeboards
- ensure that those erecting the equipment are supervised
- only use ladders as workplaces for short periods, and only when a suitable risk assessment has been carried out, recorded and briefed to the users
- employ methods of collective protection over personal protection

4.1.1 General access scaffolding

Scaffolding is used by practically everyone in construction at some time or another. It can be erected quickly to provide a safe place of work for anyone having to work at height. However, many scaffolds collapse due to overloading and many workers fall due to inadequate edge protection or defective working platforms. Whenever a scaffold is used, make sure that it:

- is designed, erected, altered and dismantled only by competent scaffolders under competent supervision
- following the requirements of industry standards and good practice
- is based on firm level foundations on ground capable of supporting the weight of the scaffold and any loads likely to be placed on it

- is braced and tied into a permanent structure or otherwise secured
- is capable of supporting the intended loads
- is fitted with scaffold boards which are properly supported with the correct overhang
- has fully boarded platforms wide enough for the work to be done and access and designed to avoid protruding nuts etc, all tube ends capped.
- has guardrails, including intermediate, and toeboards at all working platforms
- tower staircase providing access to all working platforms with friction grip stair treads. All openings fitted with gates.
- any ladders used within scaffolding must have gated protection and/or a closed trap door.
- is suitable for the work to be done

The scaffold must be inspected before use, when it is substantially altered, and at least once a week to make sure that it remains fit for use. The inspections must be carried out by a competent person and the results recorded. Any faults found must be put right before it is used again. Before contractors allow their workers to use someone else's scaffold they must ensure that it is safe.

Brick guards, scaffold nets or fans may be needed to provide extra protection against falling materials, particularly in public places.

4.1.2 Tower scaffolds

Although tower scaffolds provide good, safe access, they are involved in many incidents, usually because the tower was either badly erected or improperly used. When using a tower scaffold:

- it must be erected by a trained person (PASMA)
- have a copy of the manufacturer's manual and follow the instructions
- make sure that it is vertical with the legs on firm, level ground
- lock wheels and outriggers. Base plates give more stability if the tower is not to be moved
- provide safe access to and from the platform eg internal ladders
- provide guardrails and toeboards at platforms where there is a possibility of any person falling a distance liable to cause personal injury
- tie it to the structure it is serving if:
 - it is sheeted or likely to be exposed to high winds
 - it is used for grit blasting or water jetting
 - heavy materials are to be lifted up the outside
 - the base is too small to ensure stability

Do not:

- use a ladder footed on the working platform
- apply any horizontal load which could risk overturning the tower
- overload the working platform

Lightweight access scaffold components can be relatively easily damaged therefore, purchased or hired in components must be checked for visible damage or deterioration on receipt and periodically.

Where manufacturers' literature does not specify, this must be based on frequency of assembly, dis-assembly and use.

4.1.3 Ladders

Ladders are designed to be used as a means of getting to a workplace. Temporary staircases are to be used in place of ladders for access/egress wherever there is room to do so. Before a ladder may be used a suitable risk assessment is undertaken, recorded and briefed to all users.

Prior to the use of a ladder, check that it:

- is secure, and rests on a firm level surface
- is strong and in good condition
- is fixed at the top, or if this is not possible, at its base
- is footed by a second person if it cannot be fixed
- rests against a solid surface at the top
- is set at the correct angle, one out for every four up
- extends at least five rungs above any landing place, unless some other suitable handhold is provided

4.1.4 Mobile elevating work platforms (MEWPs)

For rules on road going vehicles / equipment and operators under the age of 21 refer to section 4.6.

Vertical lift, articulated boom and telescopic boom MEWPs allow a wide variety and different sequences of platform movements to be performed. By selecting a MEWP with the right operating characteristics we can substantially reduce the risk of entrapment. When planning an activity which involves the use of a MEWP selection must be based on risk assessment encompassing:

- travelling to and from the work area
- accessing the work area
- working at height
- risk of entrapment

- emergency procedures (a dry powder fire extinguisher is required to be available in case of fire)
- A lift plan and emergency rescue plan is required to be submitted to the agent for all MEWP operations
- the operator is trained and competent (IPAF)
- the operator's manual is with the MEWP and the operator follows those instructions. Daily, weekly and statutory inspections are carried out and recorded

Never:

- use the equipment close to overhead cables
- travel with the platform in the raised position unless the manufacturer's instructions allow you to do so

4.1.5 Roofwork

Almost one in five deaths in construction occurs in roofwork. Although most of those killed are specialist roofworkers, many are people who are involved simply in maintaining and cleaning roofs. Nearly all roofwork deaths could be prevented by the provision and use of readily available equipment. If you are involved in roof work make sure that there is:

- safe access on and off the roof
- safe access across the roof
- any roof access is a restricted zone and subject to the controls as planned
- no access in hazardous weather conditions
- the permanent roof access arrangements are installed as soon as possible in the build programme
- a safe working place (eg guardrails, safety harness or safety net)

Never throw waste material such as old slates, tiles, etc from the roof or scaffold use enclosed debris chutes or lower the debris in skips or buckets.

4.1.6 Steel erection

This is specialist work which requires careful planning. The main hazards are:

- lifting operations (see section 4.2)
- falls of persons from height
- falls of materials from height
- collapse of the structure due to incomplete bracing

A method statement must be prepared before work starts which includes:

- arrangements for safe working at height
- use of harness and lanyard by erectors
- exclusion of other contractors from the working area
- proper standing areas for cranes, MEWPs and scaffolds
- storage areas for steel sections and fabrications
- provision of temporary bracing to ensure stability

On no account should erectors be permitted to walk on the top flanges of beams.

4.1.7 In situ concrete construction

Working with concrete may give rise to both physical and health hazards. The main physical hazards are:

- falls from height while erecting formwork or steelfixing
- collapse of the formwork during erection
- falls of materials while striking formwork
- manual handling of reinforcement, shutters or concrete skips

Health hazards include:

- cement burns from wet concrete
- silica dust from scabbling
- chemicals such as release agents and curing compounds
- vibration and noise from power tools and equipment

If you are involved in the construction of concrete structures, make sure that a method statement is prepared before work starts which includes:

- checking procedures for temporary works
- provision for safe access
- checks on the equipment to be used
- precautions for load distribution on the temporary structure
- safe striking procedures
- protection of workers from wet concrete, noise, vibration, silica dust and chemicals

Where possible, concrete skips that require bale arms to be secured with a safety chain should not be used. If no suitable alternative is possible, the contractor seeks permission to use from the agent prior to bringing such a skip to site.

4.1.8 Demolition

Demolition is high risk work, the main hazards being falling from height and premature collapse of structural elements. Before any work starts, the site must be surveyed and the sequence of demolition carefully planned. A method statement must be prepared, and a competent person nominated to supervise the demolition. When preparing the method statement, consideration should be given to:

- exclusion of people not directly involved in the work
- health hazards such as asbestos, lead and dust
- the use of remote methods where possible eg long reach equipment or crane and ball
- protection of machine cabs from falling materials
- temporary support of the structure itself or adjoining structures
- the capacity of walls and intermediate floors to support debris and the weight of equipment used to clear them
- the presence of services

4.1.9 Safety harnesses

The use of a safety harness is a last resort and will only be permitted for any individual task by the issue of a permit from the agent. Any person who is required to wear a safety harness must be made aware that should they be found to be not appropriately clipped on when they should be – this will be deemed a red card offence and they will be dealt with accordingly.

Any person using a harness who is identified as not being appropriately attached to an anchorage will be subject to disciplinary procedures and may be removed from site.

The main use of safety harnesses is to limit the distance of the fall so as to minimise the risk of injury. They are not a substitute for efficient fall prevention measures, proper working platforms with guardrails and toeboards must be provided where practical.

The harness should be fitted with a lanyard which will limit the fall to a maximum of 2m. A shock absorber fitted to the lanyard will reduce the risk of injury from shock load to the body when the line tightens.

The lanyard should be attached at a point above the wearer where possible, and the attachment point must be capable of withstanding the load in the event of a fall.

Any person who is to use a safety harness must first be instructed in how it is checked, worn, adjusted and attached.

Systems must be in place to effect a rescue after a fall.

4.2 Lifting operations

All lifting operations this includes – amongst other items – cranes, telehandlers, fork lift trucks, excavators used for lifting, MEWPs, scissor lifts, HI-ABs, vacuum lifting devices, jacks and hoists, must be subject to a lift plan and a safe system of work developed by a competent person. The systems of work must be communicated to all those who are involved in the operation in any way.

The use of lorry loading cranes (such as HI-ABs) fitted with swing-up stabiliser systems must be notified to the agent and APL before use on site. The contractor will ensure the operator is fully aware of the entrapment risks and that a marshal, briefed as per ALLMI spotters briefing, is positioned to observe the retraction process.

If a contractor proposes to use a tower crane on site the agent must be notified at the earliest opportunity.

All tower cranes and their components must be less than 10 years old at time of removal from site and must be approved by BAM Plant prior to delivery to site.

The contractor will provide a contract and crane specific rescue plan and the trained rescue team /equipment when operating a tower crane.



4.2.1 Mobile cranes

For rules on road going vehicles / equipment and operators under the age of 21 refer to section 4.6.

Mobile cranes offer a safe, reliable means of lifting on site. Their ease of use, however, often leads to complacency. The main causes of accidents are:

- selection of the wrong crane
- incorrect siting of the crane
- overloading
- using incorrect lifting accessories
- untrained personnel
- failure of personnel to follow the correct procedures
- lack of maintenance

No lift is small enough to be left to chance. All lifts must be properly planned by an appointed person with the necessary expertise and not left solely to the crane operator.

Planning should include:

- selection of the correct crane for the job
- checks of certification (4 yearly test or alternative examination scheme and thorough examinations and yearly thorough examination of the crane, 6 monthly examination of lifting accessories)
- checks that an RCI is fitted and in good working order
- the positioning of the crane in relation to excavations, overhead power lines etc
- the suitability of the ground to support the load

If a contractor is not carrying out 4 yearly testing of lifting equipment but instead uses an alternative examination scheme then details of this scheme are required to be approved as meeting BAM Nuttall requirements prior to any such lifting equipment being allowed to lift on site. Details must be submitted to the agent.

During the lift, the appointed person or crane supervisor if appointed, must ensure that:

- weekly inspections of the crane are carried out and recorded
- the crane is positioned so as to avoid trapping injuries
- a competent slinger-signaller has been appointed
- the load is properly slung
- slinger-signallers follow the Hands off – 5 steps back principle during all lifting and lowering operations

4.3 Excavation

Excavation can be very hazardous. The greatest cause of incidents is collapse of the sides, anyone in the excavation may be crushed, buried or trapped. Even the most experienced have been caught out by the sudden collapse of the sides, so all excavations must be assessed to ensure appropriate support is provided where required. All excavation work must be supervised by a competent person and workers should be given clear instructions.

Stockpiles are generated on site whenever supply and removal of unbound materials are out of time with each other. They are usually safe elements of temporary works, but can cause risks in certain conditions or if improperly managed. If the need for a stockpile is identified, the contractor must liaise with the Temporary Works Co-ordinator to assess the planned stockpile and meet any temporary works requirements.

4.3.1 Trenches

All trenching work must be planned before excavation begins on site. Make sure that there are enough trench sheets, props, walings or other suitable equipment to support the length of trench

to be exposed. Trench supports must be installed without delay as the excavation progresses. Safe means of access and egress must be properly planned, installed, inspected and maintained.

Precautions which may be taken to prevent collapse in shallow trenches include:

- battered trench sides which are generally stable if sloped back to a safe angle (45° to the horizontal should be taken to be the maximum safe angle). For deeper trenches the sides may have to be benched
- traditional sheeting or proprietary support systems. Precautions must be taken to avoid danger when placing such support systems. When soil and sheeting arrangements allow, install the sheeting before excavation to final depths. The excavation and installation of sheeting should proceed by stages until full depth is achieved, or use a proprietary system that can be installed from the top surface

Every excavation must be inspected by a competent person at least once a day while people are working in it, and thoroughly examined by a competent person at least once a week (in particular the support systems). Records of examinations must be kept.

Other causes of incidents:

- workers may be struck by material falling into excavations:
 - remove loose spoil etc, store materials away from the excavation and ensure that safety helmets are worn. A scaffold board wedged along the outside of the trench sheets may also help
 - ensure excavator bucket quick hitch mechanisms are maintained and properly operated
- workers may fall into excavations:
 - erect suitable barriers, using protective trench sheets as uprights where possible. Barriers should be high enough to prevent falls
- vehicles may be driven into the excavation:
 - use adequate stop blocks and barriers

Excavators should always be positioned so as to avoid trapping injuries and suitable exclusion / restricted zones set up to prevent unauthorised access.

4.3.2 Buried services

Every year many construction workers have narrow escapes when they accidentally hit buried electricity cables or gas piping when digging. Others are not so lucky and suffer severe burns which may prove fatal. Rather than simply urging workers to dig carefully, you must approach the work systematically, using plans, cable locators and safe digging practices. Employees should receive adequate instruction and training in these procedures.

The BAM Nuttall buried and overhead services coordinator will mark all existing services on

the ground and issue a permit to dig for all excavations prior to anybody breaking the ground or penetrating the fabric of a building or structure. No person may break the ground or penetrate the fabric of a building or structure until they are in possession of this permit and have been briefed on its contents.

Flame retardant overalls and arc proof gloves will be required by all personnel digging around services.

The use of steel pins driven into the ground is prohibited.

Plans

Most electricity cables to buildings belong to a local electricity company, but cables under the highway, eg street lighting may belong to other bodies. Contact the owner of the cables and obtain plans showing the approximate line and depth of known cables. Your local gas region can also provide the approximate location of pipes. You may find that the information you require is available in the health and safety plan for the site.

The plans, together with features such as junction boxes, can give a good indication of the location and number of services to be found on a particular site. It may be possible to avoid cable routes at the planning stage of your work.

Electricity cables

Trace the position of the cable as accurately as possible with a cable locating device in conjunction with the plans. The cable locator should always be available. The line of the cable must be marked using paint, wooden pegs or waterproof chalk, never sharp spikes.

Once you have determined their approximate position, the cables should be exposed carefully by using hand tools. Use spades and shovels rather than picks and forks. Keep a careful watch for evidence of cables during digging and repeat checks with the cable detector.

Do not use power tools within 0.5m of the line of the cable, and never over the line of the cable.

No cable, pipe, duct or other underground service may be cut without a specific permit being issued by the agent.

If you are in any doubt as to whether an exposed cable is live or dead, treat it as live.

Gas pipes

Pipe locators may be used to trace metal pipes, but they will not find plastic pipes.

Trial holes should be made to find the line of gas pipes, especially service connections to buildings which will not be marked on plans. Never use a mechanical excavator within 0.5m of a gas pipe.

Where a trench is excavated crossing or parallel to a gas pipe, the back fill should be adequately compacted, particularly beneath the pipe, to prevent settlement. Do not leave any concrete or hard material under or adjacent to any gas pipe as this can cause the pipe to fracture.

If you damage a gas pipe, keep everyone away and warn the occupants of any buildings served by the pipe. Inform the owner of the pipe immediately.

4.3.3 Quick hitch mechanisms

Only the following quick hitch mechanisms are acceptable on BAM Nuttall projects:

- fully automatic two pin capture quick hitches
- fully manual quick hitches where there is no fully automatic two pin capture alternative
- manually pinned buckets and attachments as per the original equipment manufacturers (OEM)

4.4 Confined spaces

Ignorance of the dangers of confined spaces has led to the deaths of a number of construction workers. In many cases, attempted rescues have ended in tragedy with the death of the poorly equipped rescuer as well.

A closed tank with restricted access is the obvious example of a confined space, but open manholes, trenches, pipes and basements should be treated as confined spaces if there is inadequate natural ventilation.

What makes a confined space dangerous?

- the work being done can make the space dangerous, for example:
 - some paints, adhesives and liquids such as paint thinners can release dangerous amounts of solvent vapour
 - operations such as pipe freezing produce heavy, cold gases that can push out the available air in excavations
 - LPG appliances and petrol or diesel engines can lead to the build up of flammable or poisonous gases
- some confined spaces may be hazardous themselves
 - excavation in chalk can partly fill with carbon dioxide forcing out breathable air
 - in manholes connected to sewers there can be a build up of flammable and / or poisonous gases
 - sludges, if disturbed, may partly fill the space with dangerous gases
 - rotting vegetation or rusting metal may consume oxygen

If work in a confined space could be potentially dangerous, can entry be avoided eg by doing the work from outside?

If entry is unavoidable, it must be strictly controlled by a risk assessment and permit to work which ensures safe systems of work are in place.

The agent will advise you as to the site procedures for the issue of a Permit to Enter Confined Space.

Where the work being carried out could cause danger:

- keep the hazard out of the confined space:
 - do not use petrol or diesel engines inside the confined space
 - avoid substances which give off solvent vapours by using water based products
 - where possible carry out burning outside the space
- if this cannot be done, provide adequate ventilation and test the atmosphere
- do not enter the space if the tests show that the atmosphere is dangerous. Provide forced ventilation, retest to make sure that the air is fit to breathe, and only enter when safe levels are confirmed, continue testing while any person is inside the space
- ensure that anyone entering the space has received proper training and instruction in the precautions to be taken including the use of emergency breathing apparatus
- ensure that someone remains outside to keep watch and to communicate with those inside
- rescue harnesses should be worn by all people inside the space, with lifelines attached outside the work area
- rescue procedures must be planned and included in the training of workers
- never attempt to clear fumes or gases with pure oxygen



4.5 Personal protective equipment (PPE)

PPE is any equipment which protects the wearer from a health and safety risk. It includes respiratory protective equipment (RPE), eye and face protection, hearing protection, head protection, safety boots and gloves. Weatherproof and high visibility clothing are also PPE because they help protect workers from bad weather and risk of being struck by moving vehicles.

By law you must provide suitable PPE where risks have not been properly controlled by other means. When selecting PPE, you must make sure that it is:

- suitable for the risk

- suitable for the job
- suitable for the wearer
- compatible with any other PPE that may be used

Once selected, you must:

- provide the PPE free of charge
- train the user in its use
- maintain the PPE in good working order
- provide storage for the PPE when it is not in use
- provide information, instruction and training on its correct use
- make sure that the PPE is used

Employees have a duty to use and look after the PPE provided, and report any defects or damage.

The standard PPE required on all BAM Nuttall sites is full cover hi-vis, helmet, task suitable gloves, light eye protection and safety boots with midsole protection. All slinger-signallers and scaffolders are required to wear 3-point harness chin straps with their helmets.

All other personnel should carry out a risk assessment to determine if chin straps should be worn. (i.e., in high winds, tasks requiring vigorous movement). The agent will advise you regarding any site specific requirements and you will risk assess any requirement for other PPE required for your works.

4.6 Site vehicles and mobile plant

Operators of road going vehicles or plant must have a valid driving license.

Persons under the age of 21 are not allowed to operate vehicles or mobile plant on site unless:

- the agent gives written approval
- the person is the driver/operator and no alternative is reasonably available
- the driver's / operator's competence is assessed by BAM Nuttall and approved

Many workers are killed or seriously injured on construction sites by moving vehicles or vehicles overturning.

The risk can be reduced if the use of vehicles and mobile plant is properly managed, for example:

- using the designated site entrances
- using separate vehicle and pedestrian routes on site when these have been provided
- establishing and managing controlled zones

- minimising the need for reversing
- making use of marshallers to control high risk situations eg where vehicles are reversing or visibility is restricted
- ensuring that drivers are trained and visiting drivers know the site rules
- protecting scaffolding or formwork from impact damage
- providing barriers and stop logs at excavations
- ensuring that vehicles are not overloaded and that loads are secure
- keeping plant and vehicles properly maintained

If any item of plant or equipment is to travel on or across any public highway the contractor must ensure that it has suitable lighting and conspicuity markings.

The keys must be removed from all items of plant when the operator is not in attendance.

All plant used on site must be accompanied by the operator's manual and the operator must be aware of its contents.

The contractor is required to make an assessment of all plant to determine whether the conditions require that formal recorded inspections are carried out at a frequency greater than once per week ie daily. Such conditions include working in confined spaces, raising or lowering of personnel with cranes, working in marine or river environments or 24 hour working.

Weekly (or daily checks) are carried out by a competent person appointed by the contractor.

When formal daily checks are required an inspection is carried out on each shift.

If more than one operator uses an item of plant then one person is appointed as the competent person by the contractor.

As part of the inspection of mobile plant a daily brake test is carried out.

When a safety critical fault is identified the machine is quarantined until it is repaired. Safety critical items include brakes, steering, rated capacity indicators, mirrors etc.

BAM Nuttall is seeking to reduce the number of forward tipping dumpers (FTD) being used on site. Each individual use of a FTD is subject to a risk assessment process and permit to work system is applied. The agent will provide details of these requirements.

Dumpers are designed for moving free flowing materials such as earth, broken concrete, blacktop, sand and gravel etc. over short distances. The movement of dumpers around a site is a significant hazard and must be properly risk assessed and planned.

It is mandatory to have a collision avoidance system fitted to all forward and side tipping dumpers being utilised to ensure that a one metre high at one metre distance visibility criteria is complied with. In order for a dumper to operate on site, a 3 metre exclusion zone is required to all sides of the dumper.

4.7 Electricity

Electricity can be dangerous if it is taken for granted. The law requires that electrical systems are properly selected, installed, used and maintained.

4.7.1 Portable electrical equipment

Hand held tools used in construction sites should either be cordless or operate from a 110 volt supply which is centre tapped to earth. This effectively eliminates the risk of death in the event of an electrical accident.

Hand held tools and leads should be checked before use that they have a current PAT certificate and:

- there are no bare wires
- the cable is not damaged
- there are no taped or poorly-made joints in the cable
- the plug is in good condition
- the cable is gripped where it enters the plug and the tool
- the outer case of the tool is not damaged or loose and all screws are in place

It is important that those who supervise, operate, maintain and clean plant and equipment understand the manufacturer's safety warnings and guidance. These are generally found in the instruction manual for the item in use. The contractor shall ensure that these safety warnings and guidances are recorded in the risk assessment. The contractor ensures any worker using, maintaining or cleaning plant or equipment has been trained to do so, is familiar with the safety warnings and guidance and has access to the guidance should they need to refer back to it during the task.

Workers should be instructed to report any faults immediately and stop using the equipment as soon as any damage is seen.

Faulty equipment must be taken out of service as soon as the fault is discovered. Makeshift repairs should never be made.

4.7.2 Overhead power lines

Contact with overhead power lines is a regular cause of death and injury. Any work near electrical distribution cables or railway power lines must be carefully planned. As a general rule, no plant or equipment should be brought within:

- 15 metres of overhead lines suspended from steel towers
- 9 metres of overhead lines supported by wooden poles

However, these are only guidelines.

If work is to take place close to overhead lines, detailed precautions will need to be discussed and agreed with the owner of the lines and with the buried and overhead services coordinator.

All the agreed control measures must be in place prior to any works commencing in the vicinity of overhead cables.

4.8 Fire

Any outbreak of fire threatens the health and safety of those on site and will be costly in damage and delay. It can also pose a hazard to surrounding people and properties. Take precautions to reduce the possibility of outbreaks of fire and ensure that your workers know and follow the site fire precautions.

The site fire plan will be explained to the workforce at the site induction. All hot works are subject to a Hot Works Permit, the agent will provide further details.

Fire precautions:

- good housekeeping and site tidiness are important
- carry out fire risk assessments and develop a fire plan
- minimise the risk of gas leaks and fire involving gas fired plant
- good electrical safety particularly trailing leads, extension leads and chargers
- store flammable solids, liquids and gases safely
- have an extinguisher at hand when doing hot work such as welding or using a disc – cutter
- check at the end of each shift to see that all unattended plant that could cause a fire is turned off
- remove rubbish from your work area regularly

If a fire should break out, people must be able to escape. Make sure that you and your workers are familiar with the fire warning systems on site, and the escape routes. Fire extinguishers must be located at identified points around the site. Make sure you and your workers know where they are and how to use them.

4.9 The general public

Incidents often happen to members of the public walking near buildings under construction or through roadworks. In public areas you need to take account of children, people with prams, the elderly and the disabled.

Protect passers-by from falling materials with brickguards, fans or covered walkways.

Remove or tie down loose materials and scaffold boards if high winds are possible.

When planning work in streets or similar areas consider:

- signs for traffic and pedestrians
- temporary lighting and traffic controls
- cones or other barriers to mark the safety zone
- barriers to protect the public
- suitable temporary walking surfaces for pedestrians
- storage of materials
- how vehicles will get into and out of the work area
- other hazards such as buried services (section 4.3.2) and excavations (section 4.3)

Excavations in the footpath or roadway should be fenced. Work materials should be stored out of the path of pedestrians and road users. Keep pavements free of tripping hazards and make good any damage as soon as possible.

Extra lighting will be needed at night if there is insufficient street lighting. If the pavement has to be closed to protect the public, a safe alternative route must be marked.

More detailed guidance on how to manage the risks to the public can be found in the HSE publication “Protecting the public - your next move”.

Any complaint by, or injury to, a member of the public must be reported to the agent as soon as possible.

4.10 Mobile phones and devices

It is BAM Nuttall Policy to not allow the use of mobile phones or devices whilst operating any plant or equipment.

This includes the use of hands free equipment and applies to all personnel on site.

In line with this, the use of mobile phones whilst driving cars, site vehicles, vans and lorries as well as any item of operated plant on site is not permitted.

In addition to this, the site agent has assessed the risks and established clear rules on the use of mobile phones on this site.

The contractor is to ensure that these are briefed to all of their personnel and followed at all times.

Mobile phones are not used in the following situations:

- operating or banking items of plant
- slinger/signalling operations
- accessing work areas via ladders, scaffold towers, steps, etc
- working at height

- walking in areas of high activity such as earthworks or lifting operations
- any activity that requires both hands to be free and requires awareness and concentration

Similarly, on sites where mobile devices such as tablets are used for the purposes of controlling the work, the risks are assessed and rules of use are established by the agent.

These include:

- method of carrying equipment (hands free)
- where and when the equipment can be used
- limiting use whilst walking
- removal of gloves to use equipment

The use of audio devices with headphones for entertainment purposes is not allowed on site.

5.0 Health

You must identify the processes or substances you use which are hazardous to health and have in place procedures to eliminate or control the risks. Where required by legislation health surveillance must be in place.

5.1 Vibration



The vibration from hand-held tools such as pneumatic breakers, pokers or impact wrenches can affect the fingers and hands leading to conditions such as Hand Arm Vibration Syndrome (HAVS) and Carpel Tunnel Syndrome (CTS). If any of your workers use such tools you must assess the risk of harm and decide on the precautions to be taken.

In many cases, the need to use hand held tools can be removed entirely by avoiding the operation or doing it by a different means.

Prior to any use of vibration tools or equipment, and as part of the risk assessment process for the task, a specific vibration risk assessment is required. The agent can provide you with a copy of BAM Nuttall form SF106, vibration risk assessment for use as part of that risk assessment process. Alternatively, you may wish to use the HSE calculator available on their web site, although it must be noted if using this that it is BAM Nuttall policy is to reduce the daily exposure action level to 75pts and the daily exposure limit to 100pts.

BAM Nuttall are limiting the use of hand held breakers, scabblers, rock drills and any other equipment with a vibration magnitude in excess of 6.5m/s^2 . It is a requirement of all sub contracts that these tools are not used on site in any part of the sub contract works unless absolutely necessary. Contractors may apply for an exemption if it can be demonstrated there are no suitable alternatives and measures are taken to ensure the risk of HAVS is

minimised. An authorised permit, SF906, will be required to be in place prior to any use of these tools. The agent will explain this process and the associated approval timescales to use.

Where the use of other hand-held tools cannot be avoided, the following precautions should be considered:

- specify and hire reduced vibration tools suitable for the task. This is the main control after elimination and substitution
- cast piles to a more accurate level to reduce the amount of breaking
- use multi-head scabblers rather than single head scabblers for larger areas
- use high efficiency diamond blades rather than standard cutting discs
- maintain tools correctly – simple repairs like replacing worn drill bits and cutting discs and sharpening chainsaws will prevent vibration levels from increasing and will ensure they cut quicker
- use jigs to hold items to be cut or drilled
- duct cold exhaust air from tools away from the operator's hands (this will not reduce the amount of vibration but will reduce the operator's risk of vibration related health problems)
- job rotation
- health surveillance

There is no really effective PPE to prevent vibration from reaching the hands. One of the most effective controls is to keep the body and hands warm, as this helps to improve circulation.

Smoking can worsen HAVS symptoms and can increase the risk of developing HAVS; therefore, smoking should be discouraged.

An important part of protecting those at risk is to make sure that they fully understand the hazard, its cause and the steps they can take to reduce the risk. Most of the actions are under the operator's own control so we must be sure that we have made those people at risk understand what they can do.

A supervisor must control the operation and, in the case of job rotation, manage the changeover of personnel to ensure that the maximum trigger time is not reached. When it becomes obvious that the maximum trigger time will be reached the operation should be reconsidered and alternative controls put in place. If alternatives cannot be found, the operation must cease until the following day. The method of work should be reviewed at regular intervals to ensure that it is still the most appropriate way of carrying out the operation, the correct tools are being used and vibration levels are being reduced.

Occupational Health guidance must be sought for personnel diagnosed with HAVS and/or CTS before they can operate vibrating tools.

BAM Nuttall promote the use of the Reactec Havwear watch which can confirm that the control measures are effective and can also be used as a tool to ensure that maintenance is being carried out at the correct frequency.

5.2 Silica



Many common construction processes – cutting, drilling, grinding and polishing – of materials such as concrete, stone, bricks, tiles and mortar create silica dust.

Silica dust is the biggest risk to construction workers after asbestos. Prolonged exposure may cause cancers and serious respiratory diseases.

When designing works, construction process, methods of construction and specifying materials the contractor should seek to remove this hazard from the works. Engineering solutions such as water suppression, hoods and enclosures to contain dust, local exhaust ventilation must be implemented if elimination is not possible. The use of a broom or brush to tidy up is not permitted on BAM Nuttall sites due to the dust that this operation raises.

All personnel who could be affected by silica dust must be appropriately trained with regard to the hazards and control measures – this will include the controls identified in the COSHH assessments – and subject to your health surveillance regime.

Any control that requires the use of RPE must also ensure that the correct type of RPE is used and maintained and that the individuals wearing the RPE have been trained and face fit tested if appropriate. The contractor will have in place a regime to ensure that all persons wearing face fit masks are following their training correctly.

5.3 UV radiation



The construction industry has the highest rates of skin cancer within industry. You must assess the risk of UV exposure for your workforce and put controls in place to prevent or control exposure.

Typical actions may include checking the UV Index each day and communicating that information, together with the required control measures, to your personnel each day. Training your personnel regarding the hazard and the health checks they can carry out themselves. Planning the works to avoid the highest levels of potential exposure. Rotating the personnel to different tasks during the shift. Providing suitable cover / shaded areas and wearing suitable full cover PPE and eye protection.

5.4 Noise



Many construction processes are noisy and may result in permanent deafness if suitable precautions are not taken. For example piling, tunnelling, scabbling and concreting all produce very high noise levels.

The Noise at Work Regulations tell employers what they need to do to protect the hearing of their workers.

Employers must:

- assess the personal noise exposure of workers and record the results of the assessments
- reduce the noise levels at source wherever it is reasonably practical to do so (eg by using silencers, mufflers or by using quieter machines)
- if it is not possible to reduce noise levels to below the action levels specified in the regulations, provide suitable hearing protection
- tell workers what noise levels they are exposed to, how their hearing may be at risk, and what they must do to protect their hearing
- designate hearing protection zones and remove all personnel not directly involved with the activity to outside the zone
- provide health surveillance

Remember that hearing protection is always the last line of defence. Wherever possible other measures to reduce or control the risk should be adopted first.

Employees must:

- wear the hearing protection in all designated zones and when using specific types of machinery
- not misuse noise reducing equipment eg silencers

5.5 Manual handling



More than one third of all injuries reported each year involve manual handling. Many of these injuries result from repeated operations, but even one bad lift can cause permanent disability. The main hazards are:

- heavy loads
- poor posture when lifting
- slips, trips, falls and underfoot conditions
- sharp edges

In order to minimise the risk of injury, you need to identify all the hazards, make an estimate of the risks and take suitable precautions to avoid or reduce these risks. The precautions to be taken should include:

- employees must have manual handling training where appropriate
- avoid unnecessary handling, use mechanical handling where possible
- inform workers of the hazards and train them in lifting techniques

- load sharing for heavy or awkward loads
- plan the position and height of stacks in order to reduce carrying distance
- supply of bagged materials in easily handled sizes
- BAM Nuttall does not permit manual handling of road kerbs - mechanical handling is always required
- concrete blocks more than 20kg in weight are not permitted

5.6 The control of substances hazardous to health



Whether you are an employer, contractor, subcontractor or self employed, the Control of Substances Hazardous to Health Regulations (COSHH) require you to protect people who may be exposed to health risks arising from hazardous substances you work with. In order to do so, the regulations require the following six steps to be taken:

- identify the substances employees may be exposed to:
 - products used directly, such as paints and resins
 - by-products of a process, such as silica from concrete scabbling
- assess the harm they may cause:
 - how the harm could be caused
 - likelihood of harm
- eliminate or control exposure:
 - use a non-harmful substitute
 - limit the number of people exposed
 - use dust suppression
- inform, instruct and train:
 - the nature of the risk
 - the control measures
 - the personal protective equipment to be used
 - any monitoring required
- monitor the effectiveness of the precautions and initiate health surveillance when necessary

- keep records of assessments
- your assessments must be included as part of your method statement or activity plan

5.7 Fatigue



Fatigue refers to the issues that arise from excessive working time or poorly designed shift patterns. Fatigue is a perceived state of 'weariness' caused by prolonged or intensive exertion. Fatigue may result in slower reactions, memory lapses, lack of attention, unsafe acts and similar.

You, rather than your personnel, should set a good base shift pattern and monitor changes to the shift patterns and overtime worked on an individual basis for those involved with the project and have agreed and reasonable limits in place to control fatigue risks.

You need to set limits for working hours and shift patterns on the project and these need to be monitored and enforced.

Changes to working hours need to be risk assessed.

5.8 Asbestos



Breathing in asbestos dust can kill by causing irreversible lung damage and cancer. There is no known cure. You are likely to find asbestos as:

- insulation or coatings applied to boilers, pipework or steelwork
- insulating board such as ceiling tiles, internal partitions or cladding
- asbestos cement such as corrugated roof sheets, pipes or gutters

All workers who may encounter asbestos materials are required to have completed training in recognising asbestos containing materials.

If you discover asbestos in the course of your work, stop and leave it undisturbed. If you are in doubt, assume that the material does contain asbestos. Stop all works, cordon off the area and make it safe before reporting this to the agent.

All work with asbestos is covered by the Control of Asbestos Regulations which describe the precautions to be taken. Before starting any work with asbestos, an assessment must be made to decide on the precautions needed to control exposure. The assessment is the responsibility of the employer or self employed person intending to carry out the work.

5.9 Dermatitis



As an employer you have a duty under the COSHH Regulations to prevent your employees coming into contact with substances which cause dermatitis. If you cannot prevent exposure, then you must do what you can to control it by, for example:

- providing the right sort of gloves
- encouraging the use of moisturising creams before and after work
- providing face shields and protective coveralls if the face and neck are vulnerable
- ensuring high standards of personal cleanliness and hygiene
- keeping the workplace clean and tidy

5.10 Leptospirosis



Leptospirosis, or Weil's disease, is commonly carried in rats and cattle urine. Any person working near fresh water such as canals and rivers as well as those working in sewage areas may be exposed to it.

You must ensure that your personnel are fully aware of this hazard and have received adequate training and instruction on this subject.

5.11 Lead



Working with lead can cause serious health conditions including: anaemia, damage to kidneys, nerves and the brain and can cause infertility.

The Control of Lead at Work Regulations require employers to control worker exposure to lead. You will be required to:

- assess the risk
- produce a safe system of work
- introduce control measures, and carry out air monitoring if exposure is significant
- ensure high standards of personal hygiene
- place employees under medical surveillance if exposure is significant - ensuring baseline blood tests are carried out on all personnel prior to commencing any works which involves lead and thereafter at repeat intervals as per the regulations
- provide employees with information, instruction and training

If you discover lead in the course of your work, stop and leave it undisturbed. Stop all works, cordon off the area and make it safe before reporting this to the agent.

5.12 Display Screen Equipment



The Health and Safety (Display Screen Equipment) regulations require the employer to protect their employees from any risks associated with display screen equipment (DSE).

A DSE user is defined as "an individual who uses DSE for continuous periods of an hour or more on a daily basis."

If you have DSE users, you must:

- analyse workstations to access and reduce risks;
- make sure controls are in place;
- provide information and training;
- provide eye and eyesight tests on request, and special spectacles if needed;
- review the assessment when the user or DSE changes

5.13 Mental health

Our mental health is important. Each year thousands of working days are lost due to stress or depression. Suicide rates among construction workers are among the highest in industry.

You are also required to assess the risk of stress-related ill health arising from work activities and take action to control that risk. You must have procedures and practices in place to decide who may be harmed and how you will control those risks. All of your personnel should receive appropriate training with regard to mental health and wellbeing and know where they can get further support.



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