

## ELEMENT 2 CONSTRUCTION SITE - HAZARDS AND RISK CONTROL

### Learning outcomes

On completion of this element, candidates should be able to demonstrate understanding of the content through the application of knowledge to familiar and unfamiliar situations. In particular they should be able to:

- Explain the factors which should be considered when carrying out an initial assessment of a site to identify significant hazards and their risks
- Explain the appropriate general site control measures needed in setting up and organising a site
- Identify the health, welfare and work environment requirements on construction sites.
- Explain the hazards and appropriate control measures for violence at work
- Explain the hazards and appropriate control measures for substance misuse at work
- Explain the hazards associated with the movement of people on construction sites and the control measures for pedestrians

**Important Note:** Delegates are not expected to remember regulation numbers but the practical measures which should be taken, however the regulation numbers from the CDM regulations are provided to allow further research and reference as required.

### Relevant Legislation

- CDM 2015
- Health & Safety (First aid) Regulations 1981
- Health and Safety (Safety Signs and Signals) Regulations 1996
- PPE Regulations 1992
- Provision and Use of Work Equipment Regulations (PUWER) 1998
- Work at Height Regulations 2005

## ELEMENT 2 CONSTRUCTION SITE - HAZARDS AND CONTROLS

### 2.1 Initial Site assessments need to consider

- Previous use – business, industrial, is the land likely to be contaminated?
- Current use – is the site in use, will there be other companies still using the site for normal operations?
- Green field sites – environmental issues, transport etc.
- Occupied – will co-operation and planning be needed, will work need to be phased in conjunction with owner?
- Existing buildings – condition of these, are they to be demolished or retained?

### History of the site – there are a number of factors which could increase the risks

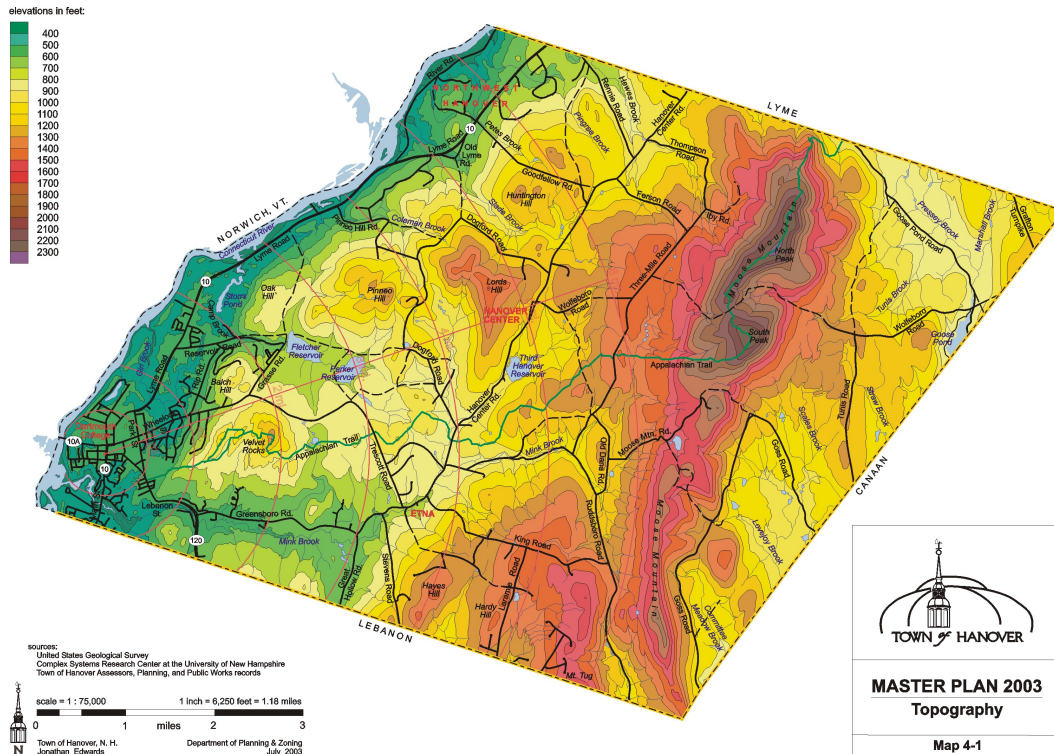
- Asbestos
- Contaminated soil – may need to be moved



- Bio contamination – leptospirosis & anthrax
- Underground voids
- Underground services
- Electricity distribution system

**Site Layout** – where are the entrance, exits, where are existing services?

**Topography** – the lay of the land, height, slopes, angle etc.



**Area of the site**

- Any restrictions?
- Roads nearby?
- Footpaths?
- Railways?
- Access to site?

**Access issues**

- Site entrances separate people/traffic
- Segregated routes
- Hazard on public roads
- One way systems
- Speed limits
- Reversing via banks man
- Signage – showing priorities
- Traffic control
- Car parking
- Mechanical road sweeping may be needed
- Overhead and underground cables – See element 6

## 2.2 Site Controls

On a typical construction site there are a variety of hazards which are likely to be present, these may include:-

- Moving machinery
- Uneven floor surfaces
- Noise
- Chemicals - highly flammables, asbestos, dust, cement etc.
- Lack of training
- Unguarded trenches
- Poor housekeeping
- Trailing electric cables
- Vibration from power tools
- Falling objects – from above ground level

An estimated £3,150 million is wasted within the construction industry per annum, this can amount to around 8.5% of a tender sum. Site layout must be addressed at the planning stage to ensure safe access is available at all times, to reduce multiple handling, reduce waste and of course most importantly to reduce accidents and injuries on site.

### a. Security Arrangements

Within the construction industry many deaths occur every year, included in these figures are the some 12 fatal accidents to members of the public, including 2-3 children.

All employers and self employed have a legal duty under S3 of HASAWA to protect members of the public from the hazards of construction, this also includes contractors and sub contractors who may be working on the project.

Non employees who may be affected by a construction project:

- visitors
- trespassers
- representatives of the client
- members of the public passing nearby

Visitors should be accompanied where possible, provided with information on the possible hazards they may encounter and be provided with adequate PPE. Those working one site should also be made aware that visitors are to be expected.

Trespassers who are thieves or vandals and members of the public etc. are still owed a common law duty of care. The contractor and client need to ensure both authorised and unauthorised people visiting are safe whilst on site.

### b. Signs

Warning signs alone are not sufficient to prevent many people from either entering a site or going into a danger zone, especially children will ignore such signs. The HSE has produced a guidance note (GS7) which relates to the precautions to prevent children having accidents on construction sites.



c. Perimeter Fencing

Suitable fencing should be provided, preferably of small mesh or close boarded to a height of 2m. Access gates should be supervised, where the fence has to be taken down to allow access it should be replaced as soon as possible.

d. Barriers & Fencing

Perimeter fencing will not be appropriate for many instances such as external refurbishment, demolition work or street works. Protective barriers can only be provided at ground level where road works are carried out there are details laid out by the Department of Transport.

Scaffolding should be close boarded and should be provided with brick guards or netting, alternative routes away from the danger area should be signed.

Waste skips should be stored in a cordoned off area. Adequate lighting may be needed if member of the public will be passing nearby especially during the night.

e. Site Roads

Roads should allow good visibility of the site, especially at entrance and exit points. Where possible pedestrians should be kept away from any vehicle movement. Any temporary or permanent road services should be of a suitable construction, dense material, drained and maintained to reduce the possibility of accidents.

Possible Controls include:-

- speed limits
- set walkways
- adequate lighting
- signs
- restrict access
- safety barriers
- information training



f. Storage on Site

This will cover a whole range of items including valuable/dangerous items to those which are vulnerable from the weather. Storage areas will very much depend on the types of items to be stored, some will need to be stored under certain conditions, in particular, hazardous chemicals. Waste is also a big problem, it must be kept from flammable materials.

## 2.3 CONTROLS MEASURES FOR PEDESTRIAN HAZARDS

CDM Reg 27

*A construction site must be organised in such a way that, so far as is reasonably practicable, pedestrians and vehicles can move without risks to health or safety.*

*Traffic routes must be suitable for the persons or vehicles using them, sufficient in number, in suitable positions and of sufficient size.*

*A traffic route does not satisfy paragraph unless suitable and sufficient steps are taken to ensure that—*



*pedestrians or vehicles may use it without causing danger to the health or safety of persons near it;*

*any door or gate for pedestrians which leads onto a traffic route is sufficiently separated from that traffic route to enable pedestrians to see any approaching vehicle or plant from a place of safety;*

*there is sufficient separation between vehicles and pedestrians to ensure safety or, where this is not reasonably practicable— (i) other means for the protection of pedestrians are provided, and (ii) effective arrangements are used for warning any person liable to be crushed or trapped by any vehicle of its approach;*

*any loading bay has at least one exit for the exclusive use of pedestrians; and*

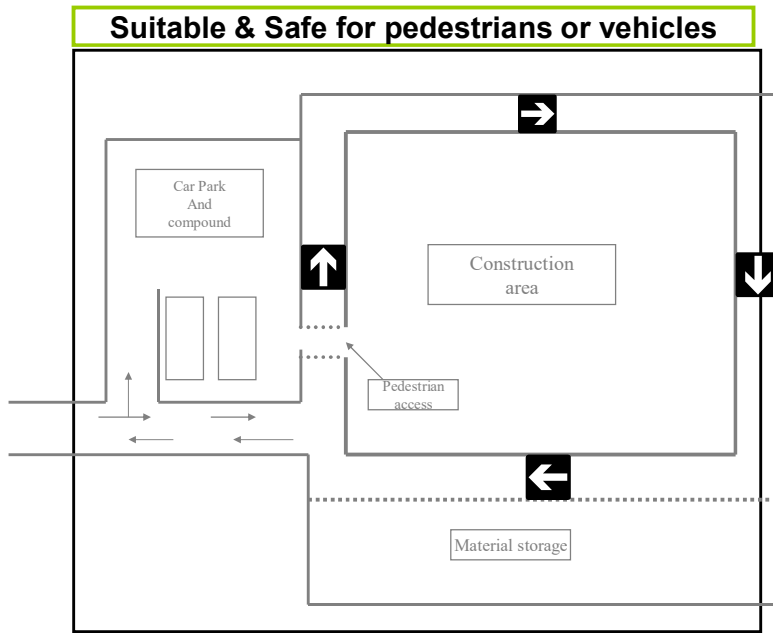
*where it is unsafe for pedestrians to use a gate intended primarily for vehicles, at least one door for pedestrians is provided in the immediate vicinity of the gate, is clearly marked and is kept free from obstruction.*

*Each traffic route must be indicated by suitable signs.*

All sites must be organised in such a way that, SFARP that vehicles and pedestrians can move safely.”

A “suitable and sufficient risk assessment of the site will need to be carried out taking into account the vehicles, site conditions, users and environmental conditions. This should lead to a transport plan and specific action to reduce the risks of injury to pedestrians, employees and others who may be affected.

Layout considerations need to be considered prior to starting work, with the aim for separation of people and vehicles.



### 2.3.1 General Precautions on site

- Slip resistant surfaces
- Control of spillages
- Good site drainage
- Designated walkways
- Fencing
- Guard rails
- Signage
- PPE – safety foot wear, high visibility jackets
- Training and information for all those on site
- Maintenance of a safe place of work
- Housekeeping – tidy away items, keep storage areas tidy
- Keep clear access and egress routes

### 2.3.2 Protection of the public

The New Roads and Street Works Act 1991 sets standards for signing and lighting of work on the highway. This type of work tends to be very temporary and is constantly changing.

The statutory 'Code of practice 2013' is a revision to the existing 'Code of practice 2001'. Known informally as the 'safety code' or the 'red book', it comes into force on 1 October 2014 and provides updated guidance on safe working at street works and road works sites.

The code has been designed to make it simpler to follow and the site layout diagrams have been redrawn to make them easier to understand. It encourages safer working practices and there is more emphasis on risk assessment, providing for pedestrians and other vulnerable road users, and site-specific design. Additional guidance is given on mobile and short duration works and working near tramways and railways, and advice on high visibility clothing and the signing and visibility requirements for works vehicles has been updated.

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The code also encourages operatives to think about minimising inconvenience to road users. (See also Element 3).

### **Risk assessment**

A risk assessment must be carried out for all works before work begins. The risk assessment must take account of road layout and speed of traffic, the works to be undertaken, location, duration and restoration of work site to original state. The risk assessment or method statement may identify additional signing, lighting and guarding that is needed to ensure the safety of road users and operatives.

Operatives carrying out the works should understand the requirements and be clear how they are going to sign, light and guard the site before work begins. The following requirements are the minimum standards for mobile works or sites of short duration activities. People at risk

- Operatives
- Road users
- Public

“Where footways and pedestrian areas are affected by street works and road works, it is your responsibility to make sure that pedestrians passing the works are safe. This means protecting them from both the works and passing traffic.

You **must** take into account the needs of children, older people and disabled people, having particular regard for visually impaired people. In order to do this you must provide a suitable barrier system that safely separates pedestrians from hazards and provides a safe route suitable for people using wheelchairs, mobility scooters, prams or pushchairs.

Always be on the lookout for pedestrians who seem confused or who are having difficulty negotiating a temporary route, and be prepared to offer assistance.

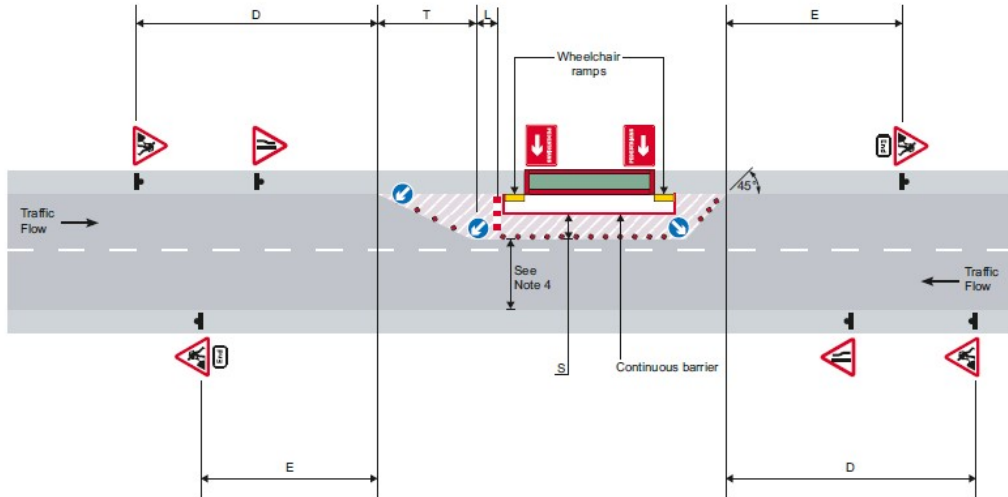
### ***Safe routes for pedestrians***

If your work is going to obstruct a footway or part of a footway, you must provide a safe route for pedestrians that should include access to adjacent buildings, properties and public areas where necessary. This route must consider the needs of those with small children, pushchairs and those with reduced mobility, including visually impaired people and people using wheelchairs or mobility scooters.

You should always try to enable pedestrians to remain safely on the footway if at all possible. Ideally, **the footway should be a minimum of 1.5 metres wide for temporary situations** but if this cannot be achieved, the existing footway can be reduced to an absolute minimum of 1 metre unobstructed\* width. Where the existing footway is narrower than 1 metre, you are not required to provide an alternative footway wider than the existing footway, but you should consider whether this is possible.

If it is not possible to maintain safe pedestrian access on the footway, consider whether there are other safe alternatives. This could mean, for example, closing the footway and placing a ‘Footway closed’ sign at the works and an advance ‘Footway closed ahead’ sign at a location where it is safe for people to cross the road (possibly with the use of portable pedestrian crossing facilities). It may be necessary to provide footway ramps on either side of the road at this location.” Extract from 2013 Code of Practice Street Works

Works on footway with pedestrian diversion into carriageway



**Traffic control by priority signs**

You can use priority signs only when **all** of the following apply:

- the speed limit is 60 mph or less;
- the length of the works from first cone to last cone is 80 metres or less;
- two-way traffic flow is no more than 42 vehicles counted over 3 minutes (840 veh/h); and
- drivers approaching from either direction have visibility before and beyond the works as shown in the table below.

Speed limit of road	Visibility before and beyond works
30 mph or less	60 m
40 mph	70 m
50 mph	80 m
60 mph	100 m



Give way to oncoming vehicles



Priority over oncoming vehicles

**Warning:** The sign and supplementary plate 'Give way to oncoming vehicles' must be positioned on the same side of the road as the works.

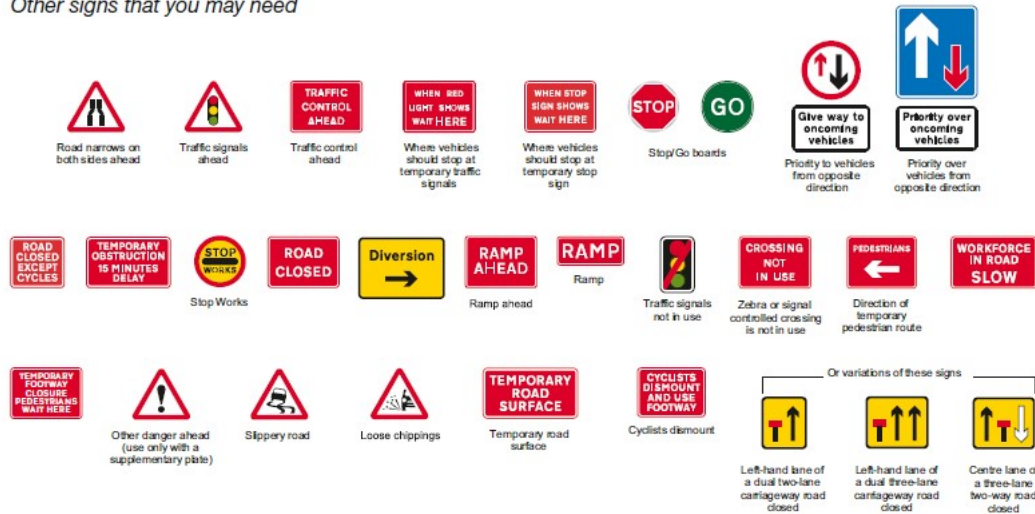


Basic signs and equipment you will need

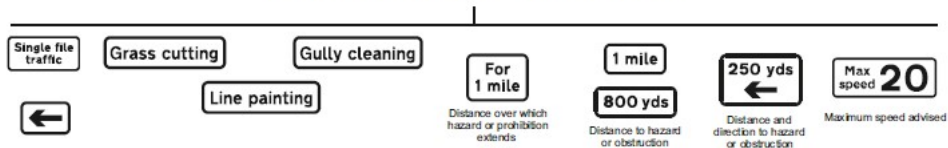


Information board

Other signs that you may need



Examples of supplementary plates for use with other signs



Specific Issues to be considered include:-

- Select suitable plant for the work and size/type of site, mini excavators may be more suitable than their larger equivalents
- Use trained people to supervise the work
- Use the correct signage, lights and information boards

- Make plant and mobile equipment more conspicuous by highlighting certain parts or fitting reflective panels
- Reinstate excavations as soon as possible
- Cover uneven surfaces
- Store items within the perimeter
- Remove plant at the end of the day if possible
- Use tools fitted with dust and noise suppressants
- Plan how materials will be raised and lowered
- Do not throw items into skips – use chutes Sometimes construction work is not constrained by the site fence or perimeter, for example loading and unloading may occur outside by delivery lorries, loads may need to be lowered or raised from the public highway or work may even be being undertaken on the highway itself.
- Access to public footpaths or rights of way must be identified, it may be that the local council or owner needs to be contacted to see if these will need to be closed or diverted on a temporary basis.
- Banks man for directing vehicles outside the site
- For activities such as crane use it may be necessary to erect temporary additional fencing
- Alternative pedestrian routes may need to be put in place with permission from the local authority
- Pedestrian tunnels or properly constructed false ceilings or crash decks may be used to protect the public from falling materials
- Minimise reversing in public areas
- Avoid crossing the traffic flow
- Allow sufficient clearance around mobile loading arms
- Chose delivery times which avoid busy pedestrian or traffic periods
- Ensure loads leaving the site are properly loaded
- Wash wheels before vehicles leave site (See photo)
- Secure plant and equipment when it is not being used
- Good security will be needed to minimise unauthorised access to the site
- Inspections of controls and barriers to ensure they are in good condition
- Ensure plant does not reach over the perimeter fence where it may hit vehicles or people



## 2.4 SITE INDUCTION

The main purpose is to impart four key areas of information:

- Site rules
- Emergency arrangements
- Welfare arrangements
- Information relating to any particular, significant or unusual hazards which exist.

It is common for people to undergo inductions as a group, in a room near the site that has been organised to facilitate the site induction process. Alternatively, inductions may be successfully conducted by walking inductees around the site, using the activities and locations they see to illustrate the relevant issues. This approach is particularly effective when inducting those with limited understanding of written and spoken English (whether or not they are from overseas).

A participative approach is preferable to a dictatorial one, and the messages will be better received from an enthusiastic, efficient induction than from a bored presenter who seems not to want to be there. Therefore, it is key to select the right person to give the inductions and to ensure their style is appropriate.

Inductions should be informative and interesting. They should:

- reflect the actual work being undertaken
- be relevant and easily understood
- be as short as is compatible with good instruction
- acknowledge those with reading or writing problems
- acknowledge those with limited English
- acknowledge young persons, new entrants and expectant mothers
- be structured to allow those taking part to see the benefits of complying – that is, going home to their families in the same state of health as they arrived at the site.

It is advisable to maintain records of those who have been inducted, along with a copy of the information that was covered in the induction.

### 2.4.1 Example induction content

Guidance on the content of inductions is given in the guidance associated with the CDM Regulations 2015

#### 1 Welcome and project description

#### 2 Objectives of principal contractor (and client)

- Zero tolerance to accidents and unhealthy work practices.
- Inclusive open approach
- Management philosophy: leadership by example; support for those pointing out dangers
- 'Don't walk by' approach

#### 3 Welfare

- Location and provision
- Respect for provision
- Canteen, rest, drying and changing facilities
- First aid
- Ask anyone who has any historical health issues which could affect them (and that they wish to share) to see the designated lead first aider

#### 4 PPE

- Generic requirements
- Procedures for issue, maintenance etc.

**5 Control measures (as set out in the health and safety plan)**

- Parking, access, traffic routes and deliveries
- Smoking
- Radios
- Mobile telephones
- Site rules
- Permits to work
- Hearing protection zones

**6 Accidents and other incidents**

- Reporting procedures
- Current situation

**7 Cards**

- Competence cards and proof of training

**8 Emergency arrangements**

- Generic elements (fire procedures etc.)

**9 Common ‘high level’ risks (site relevant)**

**10 Consultation**

- Procedures to allow consultation with workforce
- Toolbox talks
- Campaigns

**11 Individual’s responsibilities**

- Explanation of role, duties and expectations
- Zero tolerance: ‘don’t walk by’

**12 PPE**

- Related to current tasks

**13 Site-specific risks**

**14 Emergency arrangements**

- Changes to reflect project activity and progress

(Reference CITB)

**2.5 CONSTRUCTION SITE SAFETY AND WELFARE STANDARDS**

The CDM regulations 2015 cover a majority of the site specific issues, this part of CDM has not been changed significantly since the previous 2007 version of CDM, except the numbers of regulations have been amended, they include issues such as:

- Safe place of work
- Stability of structures
- Demolition
- Explosives
- Excavation
- Cofferdams
- Reports of inspections
- Energy distribution installations
- Drowning
- Traffic routes

Some of these issues are dealt with in the other course elements but an overview of all workplace issues covered is summarised here but may be mentioned additionally in the more specific elements.

### Reg 18 HOUSEKEEPING ON SITE

Every part of a construction site must be kept in good order and in a reasonable state of cleanliness, not like the example below. Every part of a construction site must be kept in good order and in a reasonable state of cleanliness. Perimeter indicated by suitable signs with the extent of the site easily identifiable. No timber with projecting nails which could cause injury to any person.



### Reg 19 STABILITY of STRUCTURES

All practicable steps shall be taken, where necessary to prevent danger to any person, to ensure that any new or existing structure or any part of such structure which may become unstable or in a temporary state of weakness or instability due to the carrying out of construction work does not collapse.

#### Example of façade bracing



Any buttress, temporary support or temporary structure must be of such design and so installed and maintained as to withstand any foreseeable loads which may be imposed on it, and must only be used for the purposes for which it is so designed, installed and maintained.



No part of a structure shall be so loaded as to render it unsafe to any person.

The demolition or dismantling of a structure, or part of a structure, shall be planned and carried out in such a manner as to prevent danger, or, where it is not practicable to

prevent it, to reduce danger to as low a level as is reasonably practicable. (See element 12 for Demolition)

**Reg 32 Excavations** - All practicable steps shall be taken, where necessary to prevent danger to any person, including, where necessary, the provision of supports or battering, to ensure that. (See Element 11 Excavations)

### **Reg 23 Cofferdams and caissons**

- (1) Every cofferdam or caisson shall be—
- (a) of suitable design and construction;
  - (b) Appropriately equipped so that workers can gain shelter or escape if water or materials enter it; and (c) properly maintained.
- (2) A cofferdam or caisson shall be used to carry out construction work only if—
- (a) The cofferdam or caisson, and any work equipment and materials which affect its safety, have been inspected by a competent person—
    - (i) at the start of the shift in which the work is to be carried out; and
    - (ii) after any event likely to have affected the strength or stability of the cofferdam or caisson; and
  - (b) the person who carried out the inspection is satisfied that the work can be safely carried out there.
- 3) Where the person who carried out the inspection has under regulation 33(1)(a) informed the person on whose behalf the inspection was carried out of any matter about which he is not satisfied, work shall not be carried out in the cofferdam or caisson until the matters have been satisfactorily remedied.

**Every cofferdam or caisson shall be of** suitable design and construction; Appropriately equipped so that workers can gain shelter or escape if water or materials enter it; and properly maintained.

#### Inspection by Competent Person

- ❖ Start Of Each Shift
- ❖ Inform Person
- ❖ Report
- ❖ Copy Kept & 3 Months After Completion
- ❖ Put Right Faults Immediately
- ❖ Weekly Record

### **Energy distribution installations Reg 25**

Where necessary to prevent danger, energy distribution installations shall be suitably located, checked and clearly indicated.

Where there is a risk from electric power cables they shall be directed away from the area of risk; or the power shall be cut off and the provision of suitable warning notices

#### Overhead cables

- ❖ Treat all overhead lines as live
  - ❖ Find out the minimum clearance specified by the electricity company
  - ❖ Erect a “goal post system” including barriers
  - ❖ Always check for overhead cables when moving a mobile tower scaffold or a ladder
  - ❖ Keep plant, etc safe distance away
- (i) barriers suitable for excluding work equipment which is not needed; or
- (ii) where vehicles need to pass beneath the cables, suspended protections; or

(iii) or equivalent measures to protect

No construction work which is liable to create a risk to health or safety from an underground service, or from damage to or disturbance of it, shall be carried out unless suitable and sufficient steps (including any steps required by this regulation) have been taken to prevent such risk, so far as is reasonably practicable. (See Element 6 for further details)

**Reg 26 Prevent risk of drowning**

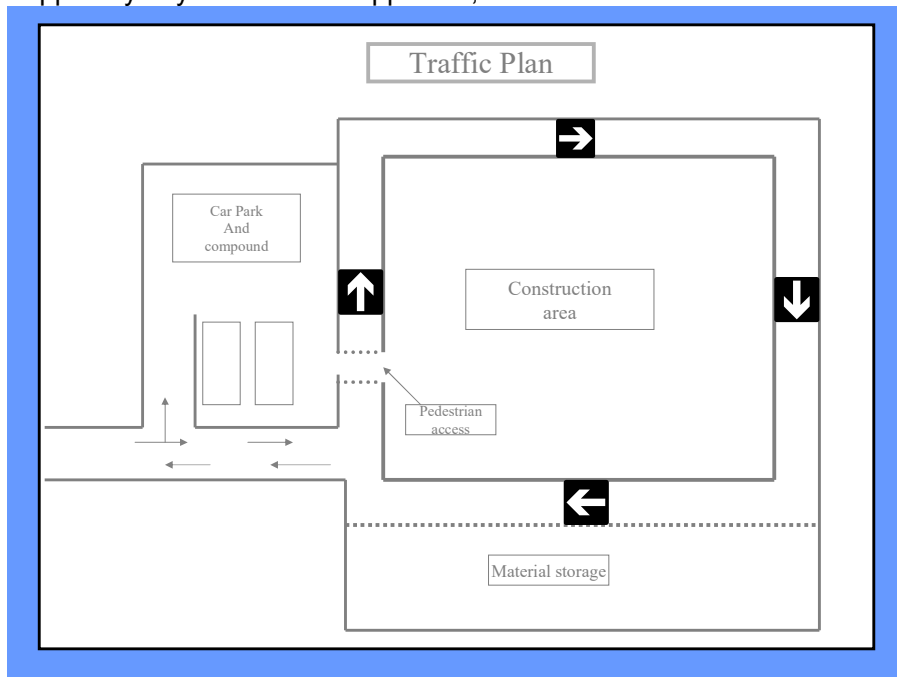
(1) Where work involves a risk of someone falling into water or other liquid and drowning, suitable & sufficient preventative steps must be taken. (To be covered in Element 12)

**Reg 27 Traffic routes**

All sites must be organised in such a way that, SFARP, vehicles and pedestrians can move safely. Routes shall be, suitable for the persons or vehicles using them, sufficient in number, in suitable positions and of sufficient size.

Suitable and sufficient steps must be taken to ensure that—

- (a) Pedestrians or vehicles may use vehicles without causing danger to the health or safety of persons near it;
- (b) any door or gate for pedestrians which leads onto a traffic route is sufficiently separated from it to enable them from a place of safety to see any approaching vehicle;
- (c) there is sufficient separation between vehicles and pedestrians to ensure safety or, where this is not reasonably practicable —
  - (i) there are provided other means for the protection of pedestrians; and
  - (ii) there are effective arrangements for warning any person liable to be crushed or trapped by any vehicle of its approach;



## Reg 28 Vehicles – Unexpected movement

- (1) Steps must be taken to prevent the unintended movement of any vehicle.
- (2) Operators of vehicles must have the means to warn other persons of the vehicles movement i.e. reversing sirens, flashing lights, etc plus mirrors, cameras,

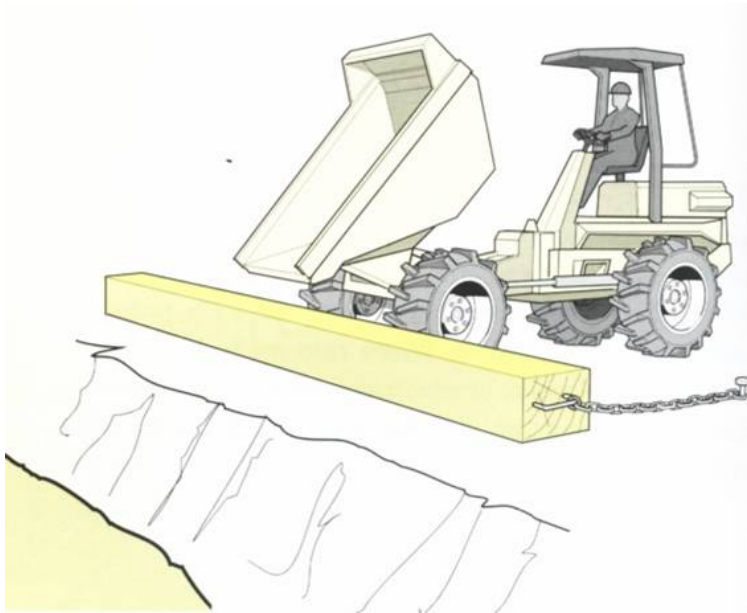
Any vehicle being used when being driven, operated or towed must be driven or towed in a safe manner. It must be loaded in such a way that it can be driven, operated or towed safely.



### Example of reversing mirrors

No person shall ride or be required or permitted to ride on any vehicle unless in a safe place e.g. the cab! No one should remain in or on any vehicle during the loading or unloading of any loose material unless a safe place of work is provided and maintained.

Suitable and sufficient measures shall be taken so as to prevent any vehicle from falling into any excavation or pit, or into water, or overrunning the edge of any embankment or earthwork



## Regulations 4, 13 and 15 Welfare Issues on site

- Ensure that all toilet, washing, changing, personal storage and rest areas are accessible and have adequate heating, lighting and ventilation.
- Facilities may need to be provided at more than one location to make sure workers have easy access.
- Make sure someone is responsible for keeping the facilities clean and tidy. How often the facilities will need cleaning will depend on the number of people on site and on how quickly they become dirty. Basic daily cleaning may not always be enough.



### **Toilets**

- Make sure that an adequate number of toilets are provided at all times.
- Men and women may use the same toilet, provided it is in a lockable room and partitioned from any urinals which may also have been provided. Otherwise separate toilets will be needed.
- Wherever possible connect toilets to a mains drainage system and ensure they are water flushing. If you cannot do this, use facilities with built-in supply and drainage tanks.
- Units used by female workers should have effective means for disposal of sanitary waste.
- Make sure adequate supplies of toilet paper are always available.

### **Washing facilities**

- Put washing facilities next to both toilets **and** changing areas and make sure they include:
  - (i) basin(s) or sink(s) large enough for people to wash their face, hands and forearms;
  - (ii) a supply of hot and cold or warm running water;
  - (iii) soap and towels (either cloth or paper) or dryers.
- If mains water is not available, use clean water supplied from a tank.
- You may need more washing facilities, including showers, where the work is particularly dirty or when workers are exposed to especially hazardous substances, e.g. development of contaminated land, or demolition of old industrial buildings which are contaminated with toxic substances, etc. These will need to be separate from the main facilities.
- You may need specialist facilities for certain activities, e.g. working with lead, asbestos, tunnelling under compressed air, etc.
- Men and women can share basins used for washing hands, face and arms.
- A shower may be used by both men and women so long as it is in a separate, lockable room which can be used by one person at a time.

### **Storing and changing clothing**

- Every site should have arrangements for storing:
  - (i) clothing not worn on site (e.g. jackets, training shoes etc);
  - (ii) protective clothing needed for site work (e.g. wellington boots, overalls, reflective jackets).
- Separate lockers might be needed, although on smaller sites the site office may be a suitable storage area, provided it is kept secure.
- Where there is a risk of protective site clothing contaminating everyday clothing, store items separately.
- Men and women should be able to change separately.
- Make sure that wet site clothing can be dried.

### **Rest facilities**

- Provide facilities for taking breaks and meal breaks. The facilities should provide a shelter from the wind and rain and be heated as necessary.
- The rest facilities should have: (i) tables and chairs; (ii) a kettle or urn for boiling water; (iii) a means for warming up food (for example, a gas or electrical heating ring, or microwave oven).
- Do not store plant, equipment or materials in rest areas.

### **Drinking water**

- Make sure there is a supply of wholesome drinking water readily available. Where possible it should be supplied direct from the mains.
- If water is stored, protect it from possible contamination and make sure it is changed often enough to prevent it from becoming stale or contaminated.
- Clearly mark the drinking water supply to prevent it being confused with water which is not fit to drink or hazardous liquids.
- Provide cups or other drinking vessels at the water tap, unless the water is supplied in an upward jet which can be drunk easily (for example, a drinking fountain).

### **Heating**

- Inadequately ventilated LPG cookers and heaters can produce carbon monoxide. Gas may escape from leaking cylinders which have not been properly turned off. You can eliminate these risks by using properly maintained electrical equipment instead.
- If this is not possible, reduce the risk by:
  - (i) using and storing the cylinders in safe, well ventilated places outside the accommodation (including overnight);
  - (ii) providing adequate combustion ventilation (provide fixed grills at high and low level);
  - (iii) checking that cylinders are properly turned off when not in use. Turn off the tap at the appliance and isolate the cylinder;
  - (iv) using wall or ceiling mounted carbon monoxide detectors.

### **Fresh air Reg 33**

- ❖ Every workplace to have suitable fresh or purified air
- ❖ Effective warning device where there is likely to be a lack of oxygen

### **Temperature and protection from the weather Reg 34**

Reasonable working temperature to be maintained at all indoor working locations.

Protective clothing and equipment to be provided for outside working in adverse weather

### **Lighting Reg 35**

- ❖ Suitable lighting must be provided at every place of work
- ❖ Where possible this lighting must be natural
- ❖ Not affect perception
- ❖ Secondary lighting where failure would cause a risk

## 2.6 HEALTH AND SAFETY (FIRST AID) REGULATIONS 1981

The Regulations are supported by a set of guidance last updated in 2013.

### The Objectives of First Aid:

1. To give immediate assistance to preserve life
2. To prevent further injuries
3. To get any casualty to medical aid if required or provide basic first aid treatment for minor injuries



### REGULATION 3 - DUTY OF EMPLOYERS TO SUPPLY ADEQUATE AND APPROPRIATE PROVISION FOR FIRST AID

Adequate and appropriate will depend on:

- Nature of work and hazards present
- Nature of workforce
- Accident history
- Size of the organization
- Needs of lone workers and those who travel for work
- Work patterns
- Distribution of the workforce on site
- Remoteness of site from medical facilities
- Annual leave cover for first aiders/Shift patterns
- First aid provision for non-employees or members of the public (not mandatory)
- Shared site provision – co-operation for multi-employer sites

An assessment of first aid need will need to be completed to determine not only how many first aiders but also what other facilities or equipment are needed. If the assessment shows a full first aider is not required an appointed person must be appointed. The needs assessment does not need to be written down as long as the employer can demonstrate they have completed it.

The regulations do not require first aid arrangements for non-employees however the organisation may feel this is something they wish to provide to meet their moral obligations. Once arrangements are in place they should be reviewed especially after any operational changes which may impact on the numbers of first aiders needed.

Records of first aid treatment must be maintained either for the site or by each first aider. This should include details of:

- The date and time of the incident (remember not all first aid will be for people who have had an accident)
- Name and job of person injured
- Details of illness or injury
- What happened immediately after the treatment was given
- Name and signature of first aider or other person dealing with the incident

First aiders need to be aware of the requirements of RIDDOR (Covered in Unit A) to ensure they highlight any issues to the employer which may need to be reported formally and without delay.

A range of first aid cover may be in place, this may include full first aiders trained in first aid at work, those who have attended the new emergency first aid at work one day course (these are now both known as first aiders) or an appointed person. Additionally where there are specific risks the employer may need to train people in additional arrangements

Layers of first aid assistance:

- Appointed person AP = appointed person
- Emergency first at work EFAW – Emergency first aid at work trained first aider
- First aid at work FAW – First aider
- Additional training

Category	No of employees	No of First aiders
Low risk – offices & shops	Less than 25	1 AP
	25 – 50	1 EFAW
	50-100	One FAW for every 100
High – Construction & Chemical manufacture	Less than 5	1 AP
	5 -50	1 EFAW or FAW depending on type of injuries
	More than 50	At least 1 FAW for every 50 employees

**First Aider:** must hold a current HSE approved certificate and renew their skills every three years.

**Emergency First aider:** Must hold a current emergency first aid at work certificate.

There is a guidance note written by the HSE on how to select a suitable training provider.

**Appointed Person:** should not render first aid but is responsible for calling professional assistance, or may render emergency first aid, if trained to do so.



**Equipment issues:-**

The assessment of need will identify the materials, equipment and facilities needed to support first aid arrangements. As a minimum they will include at least one first aid box per workplace which is always assessable.

- Accessible first aid boxes
- First aid boxes must identifiable as such
- Containing relevant materials and supplies
- Guidance note on contents in box
- Boxes ideally near hand washing facilities
- First aid items protected from dust and dirt
- First aid boxes checked to ensure fully stocked and items in date
- Other equipment may be stored in or by the first aid box e.g. blankets, disposable aprons, shears or hypoallergenic tape
- If water is not available eye wash should be provided in sealed containers (check expiry dates)
- First aid at work does not include giving any medication
- If an employer has a defibrillator then employees need to be trained in using it



If a first aid room is provided it must be easily accessible by both employees and members of the emergency services. It should be exclusively for first aid, with a couch, chair, sink with hot and cold water, drinking water, soap, store for first aid materials and foot operated refuse containers. It should also have a telephone or other communication equipment. The first aid record or treatment book may also be kept in the first aid room if there is one.

Contents of the First Aid Box

What would you expect or like to be in a first aid box?

Yes

No

Bandages  
 Triangular bandages  
 Plasters  
 Plasters – blue catering  
 Record book  
 Emergency aid leaflet  
 Scissors  
 Saline  
 Aprons

Potions and lotions  
 Detol  
 Covered cotton wool  
 Drugs  
 Eye wash nearby where there is no tap water

**REGULATION 4 - DUTY TO PROVIDE INFORMATION TO EMPLOYEES**



The following information should be made available to employees and other people coming on site:

- the location of first aid equipment
- the facilities available
- who the first aiders are

This information should be given on induction. Notices of first aid details must be displayed in English and other languages to new starters if required.

Records of all first aid given must also be kept.

This may be done via a first aid book kept by the first aid box or individual first aiders may keep their own note books. It is important that the extent of injuries is recorded just in case there are any adverse effects in the future.

**REGULATION 5 - DUTY OF SELF EMPLOYED TO SUPPLY ADEQUATE AND APPROPRIATE FIRST AID EQUIPMENT**

This may need to be co-ordinated on a shared site so that one contractor provides the first aid facilities for all.

## 2.7 SAFETY SIGNS

There are four main categories of safety sign.



### THE HEALTH AND SAFETY (SAFETY SIGNS AND SIGNALS) REGULATIONS 1996

#### Coverage:

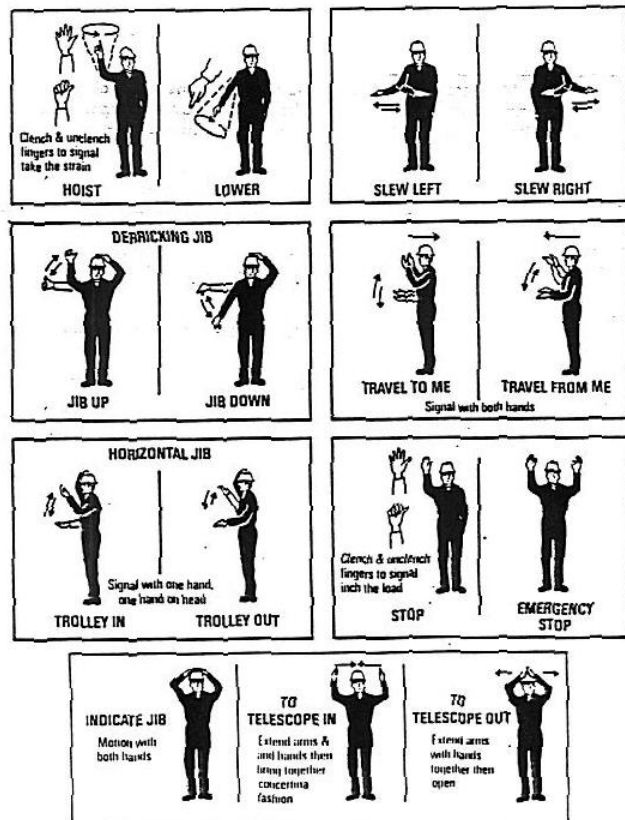
- Signs:- Prohibition, Mandatory, Warning, Safe Condition, Fire Appliance, Pipe Markings and Warning Hashes.
- Verbal signs & signals “STOP” “GO”
- Acoustic signals – This includes warning beepers on fork lift trucks or HGVs.
- Body signals – Hand signals may be used to direct traffic or cranes.

#### Main Requirement

Where a risk cannot be solved by another means, a safety sign must be provided.

All signs and signals must be clear, unambiguous and easy to understand.

The key focus should be on the use of pictograms and not just words for signage.



## 2.8 THE RISKS OF VIOLENCE

Violence at work has received increasing interest over the last decade. High profile cases have been reported in the media and publicity surrounding initiatives to reduce the risks of violence in the workplace has helped to raise awareness of the issue among the general public, the media, employers, trade unions and the government.

**VIOLENCE** *“All assaults or threats which occurred whilst the victim was working and were perpetrated by members of the public.”* British Crime Survey (BCS).

“Any incident where an employee is abused, threatened or assaulted by a member of public during the course of his / her employment” HSE – Preventing Violence to Retail Staff

Note that both the above definitions focus on the risks of violence from third parties rather than from other employees. Bullying and harassment between employees can also be a problem but will normally be covered by human resources policies rather than the general company health and safety policy. Although the employer could be held responsible in civil and criminal actions if they do not protect their staff from the risks both internally and externally.

### 2.8.1 RISK ASSESSMENT AND PERSONAL SAFETY

#### i) Identification of Hazards

##### Who presents risk?

- Those on drugs / alcohol
- Mentally unstable
- Aggressive

##### What factors may increase the risk of injury?

- Jobs / premises where there is a public interface
- Lone working
- Carrying cash
- Unsocial or shift work
- Mentally / emotionally unstable people
- People under the influence of drugs / alcohol
- Working alone and working outside normal hours
- Handling drugs – these may be seen as a target by some
- Travelling across sites
- Staff attitude – if a member of staff rises to a comment or action they may find that their attitude could make the situation worse.

#### ii) Who is at Risk?

Those staff who meet the public face to face are at greater risk, however those dealing with people on the telephone may also have to deal with verbal abuse. Additionally verbal abuse and attacks may on rare occasions be carried out by colleagues rather than third parties.



**iii) Identify Any Existing Controls**

What action has the organisation already taken to reduce the risk of injury?

- Have people been trained?
- Have safe procedures been implemented for cash handling?
- Is the environment suitable and well designed with no blind corners?
- Are staffing levels satisfactory?
- Have staff received induction training?
- Are ID badges worn?
- Are incidents and accidents reported?

**iv) Risk Evaluation – See risk assessment section**

**v) Controlling the Risks of Injury**

There are many practical steps which can be taken to help ensure the safety of staff, equally there are steps that we can all take to contribute to a safer environment for all.

- Improved lighting internally and externally
- Security locks on main entrances
- Observation panels – so that you can see if there are other people within the area
- Limited access out of hours to the main buildings
- Staff training - difficult behaviour, break away techniques, customer care
- Counselling - post incident debriefing
- Accompanied across sites out of hours where required
- Personal attack alarms available
- Alarms in key areas
- Planned routes to be known
- Limiting the amount of valuable equipment carried
- Providing training on issues such as defusing difficult situations
- Rotating staff so their exposure time is reduced
- Storage and security of items in cars
- Checks on lone workers
- Staff identification badges
- Accident/Incident investigation to follow up and take further action.
- CCTV in key areas
- Staffing levels – to ensure adequate numbers of staff are available

## 2.9 SUBSTANCE MISUSE AT WORK

UNISON (2003) reported that 5% of all sickness absence is believed to be due to alcohol abuse and alcohol is involved in up to 25% of industrial accidents. The individual effects of drugs and alcohol may include:

- Mood changes
- Irritability/aggression/confusion
- Theft/dishonesty (to pay for an expensive habit)
- Poor concentration/production
- Poor time-keeping

In addition, there are effects on a business, which may include:

- Increased absenteeism
- Increased staff turnover (persistent abusers may be dismissed from their employment)
- Reduced productivity
- Increased risk of accidents - alcohol and drugs affect judgment and physical co-ordination and so can increase the risk of accident (particularly in safety critical tasks)

Useful information is published by the HSE and can be downloaded free of charge INDG91 deals with Drugs Misuse at Work and *Don't mix it: A guide for employers on alcohol at work* INDG240.

### 2.9.1 Strategy for Control

As with any other hazard of work, the first stage of control is to establish whether there is, in fact, a problem. There may be staff in the organisation who use drugs recreationally or drink excessively, but this does not necessarily mean there is a safety issue. Examine data on absenteeism, productivity, accidents and disciplinary records which may indicate a problem exists.

If a problem is indicated, then it is necessary to develop and implement an Alcohol & Drugs Policy. A written policy should be developed in consultation with the workforce, through the normal consultation channels. Consultation with medical personnel is also desirable, especially where invasive sampling is a part of the strategy.

A control strategy may employ measures to reduce alcohol/drug-related problems such as:

- Proper management and supervision (not encouraging behaviour which incites misuse of alcohol/drugs).
- Proper arrangement of work (not placing a rehabilitated worker in a situation which may have contributed to the problem).
- Prohibition/restriction of the availability of alcohol/drugs on the premises
- Training, including:
  - Providing details of effects of alcohol/drugs on health.
  - Training for supervisors/managers on identification/counselling/confidential referral of individuals with alcohol/drugs issues.
  - Rules to be followed and consequences of non-compliance
- Identification, assessment and referral of individuals with alcohol/drug issues.
- Alcohol/drugs testing of individuals – particularly in safety critical jobs.
- Creating and enforcing rules governing conduct and disciplinary measures for their infringement (including dismissal)
- Arrangements to ensure the confidentiality of any persons affected

Employers may want to think about the following:

- A programme of awareness for **all** staff
- There are many ways to provide such training: group sessions, seminars etc. This programme may also cover an explanation of your drugs policy
- A programme of training for managers or supervisors on recognising the signs of drug misuse. This could be the most crucial part of managing drug misuse at work as they will need to be clear about the business' rules about drug misuse. They will need to know what to do if they suspect an employee is misusing drugs or if they are approached by an employee who declares a drugs problem. Local drug or health advisory services may be able to help train managers to recognise the signs of misuse and how to handle the situation. The service may charge for training.
- Encouraging those with a drugs problem to seek help
- The need for confidentiality if an employee admits to a drugs problem. People with a drugs problem may be persuaded to come forward if they are assured that their problems will be dealt with discreetly. However, you will also have to consider your own legal position, if evidence or information supplied to you suggests that an employee's drug problem has involved breaking the law at work
- The nature of the work you do. Are there any aspects of the work that are safety-critical, e.g.: using machinery, electrical equipment or ladders, as well as driving or operating heavy lifting equipment, where instances of drug misuse could have serious consequences?

### **2.9.2. Testing For Drugs and Alcohol**

Random drug & alcohol testing is employed in some industries, but usually only where safety-critical work is undertaken, such as in the railway industry. In order to impose such a strategy it must be a condition of an individual's contract that they are prepared to undergo such testing. Breathalyser kits such as the Lion intoximeter, may be used for alcohol, and drug testing may be undertaken using proprietary kits analysing blood, urine or saliva. There are issues of accuracy with some kits that are prone to give false positives. Higher accuracy may be achieved, but this needs expensive laboratory analysis.