



# MORRIS



# PLANT HIRE

*78 Bethal Quarters, Apawa, Takoradi, Ghana.*

## *Company Safety Statement*

Company Safety Statement		Prepared by	
Revision	Reason for Revision	Initials	Date
000	Initial Release of Document		26/08/12
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Statement of Intent

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## SAFETY STATEMENT POLICY

Our policy at John Morris Plant Hire, is to comply with the Health, Safety and Welfare Act 2005, and the associated General Application Regulations 2007, Construction Regulations 2006, Fire Safety Act 1981/2003, which set out the prevention of ill-health and accidents at work is to be achieved.

Our Safety Statement is aimed at protecting our staff, clients, contractors and members of the public from work place accidents and ill-health.

The Safety Statement is available to all our employees, outside service providers and Inspectors of the Health & Safety Authority.

The necessary training and system of work will be given to ensure as far as reasonably practicable, a workforce free from hazards and risks.

It is our policy, when purchasing new equipment or altering/replacing existing equipment to ensure, as far as reasonably practicable, that they are free from hazards and of CE quality. The same will apply to all our systems of work.

The required funding and resources to effect this policy will be made available.

We will update this policy, as necessary and will review same, at least once per year. In particular we undertake, to comply with all relevant health, safety and welfare legislation to include the following.

- Provision of a safe workplace.
- Safe access and egress routes.
- Safe system of work/safe equipment.
- Provision of appropriate personal protective equipment.

**Signed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**John Morris, Managing Director.**

**Part 2: Duties & Responsibilities**

## **2.1 DIRECTORS**

1. Prepare and keep up to date the Company Safety Statement and ensure that it is brought to the notice of all employees.
2. Prepare instructions for the organisation and methods for carrying out the Company Policy, to make sure each person is aware of their responsibilities and the means by which they can carry them out.
3. Know the appropriate statutory requirements affecting the Company's operations.  
(N.B. Construction Regulations 2006)
4. Ensure that appropriate training is given to all staff as necessary.
5. Insist that sound working practices are observed as laid down by Codes of Practice and that work is planned and carried out in accordance with the statutory provisions.
6. Ensure that tenders are adequate to allow for proper welfare facilities, safe working methods and equipment to avoid injury, damage and wastage and that health and safety factors are considered in the selection of sub-contractors.
7. Ensure that there is liaison on health and safety matters between the Company and others working on the site.
8. Institute reporting, investigations and costing of injury, damage and loss, promote analysis of investigations to discover trends and eliminate hazards.
9. Reprimand any member of the staff failing to discharge satisfactorily their responsibilities for health and safety.
10. Instigate liaison with external accident prevention organisations, encourage the distribution of safety literature throughout the Company.
11. Arrange for funds and facilities to meet requirements of the Company Policy.
12. Make certain that Agents, Engineers, Foremen etc. understand that injuries, equipment damage and wastage will all be taken into account when bonus, salary review and promotion are being decided.
13. Set a personal example when visiting sites by wearing appropriate protective clothing.
14. Ensures that the prevention of risk to health at work of his or her employees relating to the use of any article or substance or the exposure of noise, vibration or ionising radiation or other radiations or any other physical agent.
15. Includes the hazards to safety, health and welfare at work and the risks identified by the risk assessment.
16. Ensures that reportable accidents and dangerous occurrences are reported to the H.S.A.
17. Appoint one or more competent persons to specifically advise the employer on compliance with the safety & health laws.
18. Ensures that designing, providing and maintaining a safe place of work that has safe access and egress, and uses plant and equipment that is safe and without risk to health.

## 2.2 *CONTRACTS MANAGER*

1. Understand the Company Safety Statement and ensure that it is readily available on each site. Plan all work in accordance with its requirements and ensure that it is regularly examined to establish if improvements or additions should be made.
2. Determine at the planning stage:-
  - a) The most appropriate order and method of working
  - b) Provision of adequate lighting and safe method of electrical distribution.
  - c) Allocation of responsibilities, and any necessary liaison requirements between this Company and others on site.
  - d) Hazards arising from underground and overhead services.
  - e) Welfare facilities required.
  - f) Fire precautions
  - g) Any particular training or instruction required for site personnel.
  - h) Temporary works provision (scaffolding, excavation support, etc.)
  - i) The time required to complete the project safely.
3. Assess the risks and provide written instructions in unusual situations not covered by Company Policy to establish working methods and sequences, outline potential hazards at each stage and indicate precautions to be adopted. Obtain Method Statements from sub-contractors carrying out high risk activities such as demolition, steel erection, asbestos removal, etc.
4. Obtain details from sub-contractors of assessments of risk associated with substances, processes or any work activity hazardous to health and safety which they intend to carry out, and check that their planned control measures will provide protection to others on the site.
5. Ensure, so far as is reasonably practicable, that work once started is:-
  - a) Carried out as planned and that account is taken of changing or unforeseen conditions as work proceeds.
  - b) Carried out in accordance with the Construction Regulations and other appropriate statutory requirements.
6. Reprimand any member of site supervisory staff for failing to discharge safety responsibilities satisfactorily.
7. Check over working methods and precautions with site management and the Safety Supervisor before work starts (preferably at pre-contract meeting)
8. Take appropriate action when notified of disregard on site of the Safety Advisors advice.
9. Set a personal example when visiting site by wearing appropriate protective clothing.
10. Ensure that the Safety Supervisor is notified of all new sites giving as much notice as possible.
11. Carry out any necessary notifications to Local Authorities, Gardai, etc.
12. Takes overall responsibility for Safety, Health and Welfare on all projects under his control and has a full knowledge of the contents of the Company Safety Statement.
13. Ensures that adequate provision for Safety and Health is made in planning and pricing contracts.
14. Ensures that the provisions of the Safety Statement are executed from project inception to completion.
15. Ensures that Work Commencement Notice (form AF2) is issued to H.S.A. by registered post where Company is appointed Project Supervisor (Construction Stage).
16. Holds a Start-Up Meeting on site with the Site Agent and the Company Safety, Health and Welfare Officer.



17. Ensures that all hazards, reasonably foreseeable, are identified and adequate arrangements formulated to safeguard against them before the project commences or any new phase of the Project begins.
18. Ensures that all personnel under his control fully understand and accept their responsibilities in matters of Safety, Health and Welfare.
19. Gives full support to the Safety Health and Welfare Officer, makes safety a priority and gives good example by showing a personal interest in safety at all times.
20. Ensures that training is provided for Supervisors and Foremen to enable them to carry out their safety roles effectively.
21. Ensures that plant and machinery allocated to each project is inspected in accordance with the regulations, certificates are to hand and records of Inspections entered in the appropriate forms and retained for inspection.
22. Ensures that all personnel recruited for or assigned to each site are suitable for and competent to carry out their duties.
23. Ensures that all new employees undergo Safety Induction Course and that other training will be provided for those who need it particularly on plant operation, and deep excavations.
24. Ensures that Sub-Contractors and Self Employed Persons are aware of Company Policy and that they will comply with these procedures.
25. Ensures that Sub-Contractors have prepared their own Safety Statement and a copy has been received.
26. Ensures that adequate protection is provided to protect the public and particular attention is given to ensure children cannot gain access to site as far as reasonably practicable.

### **2.3 SITE AGENT**

1. Understand the Company's Safety Statement and ensure that it is brought to the notice of all employees, particularly new starters. Carry out all work in accordance with its requirements and bring to the notice of the Contracts Manager any improvements or additions which you feel necessary.
2. Organise sites so that work is carried out to the required standard with minimum risk to employees, other contractors, the public, equipment or materials.
3. Where necessary, issue written instructions setting out the method of work. Check that sub-contractors engaged in high risk activities are working in accordance with their agreed Method Statement (Demolition, Steel Erection, Roofing etc.).
4. Know the requirements of the Construction Regulations 2006 and other relevant legislation and ensure that they are observed on site.
5. Keep all registers, records and reports up to date and properly filled in and ensure that they are kept in a safe place. Ensure that copies of Regulations are available and statutory notices are prominently displayed.
6. Ensure that the "competent persons" appointed to make the necessary inspections of scaffolding, excavations and plant have sufficient knowledge and experience to evaluate all aspects of safety relating to the item being inspected.
7. Ensure that Supervisors and operatives under your control are aware of their responsibilities for safe working and that they are not required or permitted to take unnecessary risks.
8. Arrange delivery and stacking to avoid double handling and ensure that off-loading and stacking is carried out in a safe manner.
9. Ensure that any electricity supply is installed and maintained in a safe and proper manner.
10. Ensure that all information available relating to underground services on site is obtained and that services are located, marked and plotted accurately before excavation work starts
11. Do not allow the mechanical excavator within limits of the underground service laid down by the Service Authority and Company Policy.
12. Protect all overhead services in accordance with the Service Authorities recommendations and Company Policy before work starts.
13. Plan and maintain a tidy site.
14. Implement arrangements with sub-contractors and others on site to avoid confusion about areas of responsibility for health, safety and welfare.
15. Check that all machinery and plant on site, including power and hand tools, are maintained in good condition and that all temporary electrical is not more than 110 volts.
16. Ensure that adequate supplies of protective clothing and equipment are maintained on site and that the equipment is suitable.
17. Ensure that the protective clothing is issued when required and that records are kept of issue.
18. Ensure that adequate first aid facilities are on site and that all persons on site are aware of their location and procedure for receiving treatment for injuries.
19. Ensure that a system is organised in the event of an emergency for applying first aid and calling an ambulance.

20. Accompany Health & Safety Inspector on site visit and act on his recommendations. In the case of the Inspector issuing a Notice (Prohibition or Improvement), contact the Contracts Manager immediately after complying with any requirements to stop work.
21. Cooperate with the Company's Safety Adviser. Ask for his/her advice before commencing new methods of work or potentially hazardous operations.
22. Ensure that adequate fire precautions are provided for site offices and welfare facilities and that any flammable liquids or liquefied petroleum gases are stored and used safely.
23. Examine drawings and soil investigation reports to determine excavation support requirements in advance and provide in accordance with Company Policy.
24. Set a personal example by wearing appropriate protective clothing on site.
25. Ensure that any accident on site which results in an injury to any person (not just employees) and/or damage to plant or equipment is reported in accordance with Company Policy.

## **2.4 SITE SUPERVISION**

1. Read and understand the Company's Safety Statement and ensure that it is brought to the notice of operatives under your control. Carry out all work in accordance with its requirements.
2. Know the Construction Regulations applicable to the work on which your operatives are engaged and insist that these Regulations are observed.
3. Incorporate safety instructions in routine orders and see that they are obeyed.
4. Do not allow operatives to take unnecessary risks.
5. Ensure that new employees, particularly apprentices and young people, are shown the correct method of working and all safety precautions.
6. Ensure that young employees (under 18 years) do not drive any item of plant or operate any type of tool or equipment except under direct supervision.
7. Commend operatives who, by action or initiative, eliminate hazards.
8. Do not allow "horseplay" or dangerous practical jokes and reprimand those who consistently fail to consider their own safety or that of others around them.
9. Report immediately any defects of plant or equipment.
10. Report any accident, however minor, to supervision immediately.
11. Set a personal example by wearing protective clothing and by carrying out your own work in a safe manner.
12. Look for and suggest ways of eliminating hazards. Bring to the notice of supervision any improvements or additions to the Company Safety Statement which you feel should be made.

## ***2.5 PROJECT SUPERVISOR FOR DESIGN PROCESS (PSDP)***

1. Read and understand the company's safety statement and ensure that it is brought to the attention of any employee under your control.
2. Ensure that the time allocated to the project allows for the safe completion of all the stages of construction.
3. Prepare a Preliminary Health and Safety Plan which will include information on any particular risk, a general description of the project and time frame and the appropriate information on any other work activities taking place on site.
4. Provide any information to the Project Supervisor for Construction which needs to be included in the Safety File.
5. Coordinate the activities of other persons engaged in the design of the project with respect to health and safety.
6. May appoint a competent person, i.e. a safety coordinator, to undertake the duties of the project supervisor with respect to health and safety.
7. Organise co-operation between designers.
8. Prepare a safety file for the completed structure and give it to the client.
9. Notify the H.S.A. and client of non-compliance with any written directions issued.
10. Retain a copy of the direction issued and notification to the H.S.A. in the health and safety plan.

## **2.6 DESIGNERS**

1. Read and understand the Company's Safety Statement and ensure that it is brought to the notice of any employee under your control.
2. Take account of relevant health and safety legislation, relevant health and safety plan or safety file when designing any project.
3. Cooperate with the Project Supervisor for Design or Construction as appropriate to enable that Project Supervisor to comply with the Construction Regulations 2006.
4. Provide the appropriate Project Supervisor with information regarding particular risks on the project, and also with information as to the nature and scope of the project.
5. Comply with directions issued by the PSDP & PSCS.
6. Where no PSDP has not been appointed, inform the client that a PSDP must be appointed.
7. The safety health and welfare at work act 2005 requires designers to ensure that the project is capable of being constructed to be safe, can be maintained safely and complies with all relevant health and safety legislation.

## **2.7 PROJECT SUPERVISOR FOR CONSTRUCTION**

1. Read and understand the Company's Safety Statement and ensure that it is brought to the attention of any employee under your direct control.
2. Prepare a health and safety plan for the construction site as prepared on a preliminary basis by the Project Supervisor for Design, and update that plan on a regular basis or where the need arises.
3. Prepare a safety file appropriate to the nature of the project containing all relevant health and safety information taken into account during construction work.
4. Comply with the S.I. No. 299 of the Safety, Health and Welfare at Work (General Application) Regulations 2007.
5. Coordinate the implementation of any relevant legislation with other contractors on site with respect to health and safety.
6. Coordinate arrangements for checking the implementation of safe working procedures.
7. Coordinate measures to permit authorised persons only on site.
8. Keep records of any deaths, injuries or dangerous occurrences and make those records available to the HSA as requested.
9. Ensure all operatives are given adequate training and have adequate access to health and safety information.
10. May appoint a competent person as health and safety coordinator for the construction stage to undertake on his behalf the duties of project supervisor as regards to health and safety.
11. Retain a copy of the direction issued and notification to the H.S.A. in the health and safety plan.
12. Notify the H.S.A. and client of non-compliance with any written direction issued.
13. Appoint a safety adviser where there are more than 100 people on site.
14. Appoint a safety representative where there are 20 people or more on site.
15. Co-ordinate that all employees have a safe pass card and relevant training cards

## **2.8 SITE ENGINEERS**

1. Read and understand the Company's Safety Statement and ensure that it is brought to the notice of any employee under your control.
2. Ensure that information effecting the health and safety of any person on a proposed site is brought to the attention of the Contracts Manager, in particular:
  - (a) Underground services
  - (b) Ground conditions affecting the stability of excavations or safety of operatives (soil, water table, toxic substances, gases, etc.)
3. Report to Site Manager any unsafe situation observed whilst on site.
4. Carry out your own work in a safe manner. Take precautions when working on or near public roads. Wear any necessary protective clothing or equipment.
5. Ensure that records are maintained of any underground services laid on site and that, wherever possible, these are defined by marker posts and signs during the construction period.
6. Ensure that all precautions are taken with laser surveying equipment as required by Company Policy.
7. Provide eye protection to chainman required to use masonry nails for setting out purposes.
8. Ensure that any design calculations for unusual scaffolds, falsework, etc. are independently checked.



## **2.9 OFFICE WORK**

1. Read and understand the Company's Safety Statement and carry out your work in accordance with its requirements.
2. Ensure that the clothing and particularly the footwear you wear at work is suitable from a safety viewpoint.
3. Do not try to use, repair or maintain any office equipment or machinery for which you have not received full instructions or training.
4. Report any defects in office equipment or machinery immediately to your Supervisor.
5. Find out from your Supervisor the position of the first aid box.
6. Ensure that you know the procedure in the event of a fire.
7. Report any accident or damage, however minor, to your Supervisor.
8. Ensure that corridors, office floors, doorways etc. are kept clear and free from obstruction.
9. Do not attempt to lift or move, on your own, articles or materials as heavy as likely to cause injury.
10. Do not attempt to reach high shelves unless using steps or a properly designated hop-up: do not improvise or climb.
11. Suggest ways of eliminating hazards and improving working methods.
12. Do not smoke in designated "No Smoking" areas and dispose of spent matches, cigarette ends, etc. properly.
13. Warn new employees, particularly young people, of known hazards.

## **2.10 BUYING**

1. Read and understand the Company's Safety Statement.
2. Ensure that all equipment or materials purchased by the Company are to the standards required by Company policy.
3. Ensure that all suppliers are asked to provide full information on any hazards associated with the equipment or materials supplied and any precautions required and that this information is passed to relevant supervision.
4. Set a personal example by wearing appropriate protective clothing, if required to visit sites.
5. Ensure that suppliers are informed of safe working loads of plant used for handling materials on site so that materials are delivered in suitable size loads.
6. Ensure that sub-contractors have received lists of responsibilities and Company Safety Statement in accordance with this Policy.
7. Rates negotiated for work carried out by sub-contractors must include all necessary safety precautions and, where appropriate, separate rates should be included for health and safety measures.

## ***2.11 ESTIMATING/QUANTITY SURVEYING***

1. Understand the Company's Safety Statement.
2. Ensure tenders are adequate to cover sound methods of work and reasonable welfare facilities.
3. Report on unsafe practices observed when visiting sites.
4. Have knowledge of the various statutory requirements governing the Company's work.
5. Set a personal example by wearing appropriate protective clothing when visiting sites.

## ***2.12 PLANT OPERATING***

1. Read and understand the Company's Safety Statement and carry out your work in accordance with its requirements.
2. Know the legal requirements affecting the use of your machine and ensure that the machine is used in accordance with those requirements.
3. Ensure that any defect in the machine is reported immediately to the Plant Manager. Do not continue to operate the machine if the defect affects its safe use.
4. Ask for, and use ear protection to ensure that you do not suffer from gradual loss of hearing due to prolonged exposure to noise.
5. Never try to use the machine for work for which it was not designed. If in doubt, ask the Plant Manager for advice.
6. Wear suitable safety footwear and protective clothing as you are exposed to the same hazards as others on the site when not in the cab of your machine.
7. Suggest ways to eliminate hazard or improve working methods.
8. Ensure when operating your machine that other persons are well clear, especially if reversing.
9. Ensure, if necessary, that you work with a Banksman and, if so, you are both sure before starting work of the meaning of signals which may be used.
10. Report all accidents or damage, however minor to supervision.
11. Check, prior to starting work, with the Site Agent or their supervision of the location of underground or overhead services.
12. Ensure that if your machine is used for lifting purposes it is sited on firm, level, well consolidated base with suitable bearing timbers used under extended outriggers, if applicable.
13. Ensure first aid facilities are provided and maintained.
14. Ensure all accidents are reported as required by Company Policy.
15. Set a personal example by using and wearing any necessary protective equipment, when appropriate.

### ***2.13 TRANSPORT DRIVING***

1. Read and understand the Company's Safety Statement and carry out your work in accordance with its requirements.
2. Ensure that any defect in your vehicle is reported immediately to the Transport Manager.
3. Make regular inspections of your vehicle for obvious defects.
4. Wear suitable safety footwear and protective clothing as you are exposed to the same hazards as others on site when not in the cab of your vehicle.
5. Always report to site office or a Site Supervisor before travelling around any site.
6. Get out of the cab of your vehicle when it is being loaded with loose materials (unless suitable means are provided to protect the cab).
7. Drive in a safe manner at all times and be particularly careful when driving on sites to consider the conditions of temporary access roads or roads that are under construction and being used for access purposes.
8. Ensure before reversing that there are no obstructions or people behind the vehicle. Preferably, ask someone to act as Banksman when you reverse.
9. Ensure that when reversing or driving towards an edge that a suitable stop has been provided to prevent the vehicle going over the edge.
10. Ensure that when you have tipped your load, you do not travel forward until the tipper body has returned to the travelling position. This is particularly important on sites with overhead services.
11. Report all accidents or damage, however minor, to the Transport Manager.
12. Ensure that any load on your vehicle is well secured; also that your vehicle is not overloaded or loaded in such a way as to affect the handling of the vehicle.

## ***2.14 JOINERS***

1. Read and understand the Company's Safety Statement.
2. Report to supervision any defects in the woodworking machinery, particularly guards.
3. Always adjust guards before setting the machine in motion.
4. Always, when necessary, use the push sticks, spikes etc. provided when feeding timber into machinery.
5. Work in a safe manner at all times. Wear suitable footwear and clothing; do not wear ties, scarves or have loose cuffs.
6. Ensure that the space around machines is kept clear of offcuts, sawdust, and other obstacles.
7. Do not use machinery if you are not sure of the correct method of operation.
8. Warn new employees, particularly apprentices and young people, of known hazards.
9. Read all instructions on containers of glues, resins etc. and take any precautions necessary.
10. Suggest to supervision ways of improving safety and eliminating hazards.
11. Report any accident or damage, however minor to supervision.
12. Find out what to do in the event of fire.
13. Report to supervision any person abusing welfare facilities.
14. Ask for, and wear, ear muffs if you are required to work on noisy machinery.
15. Do not play dangerous practical jokes or "horseplay" in the workshop.

## **2.15 OPERATIVES**

1. Read and understand the Company Health and Safety Policy and carry out your work in accordance with its requirements.
2. Use the correct tools and equipment for the job.
3. Wear safety footwear at all times and use, where necessary, all protective clothing and safety equipment provided, e.g. safety helmets, goggles, respirators and so on.
4. Keep tools in good condition.
5. Report immediately to supervision any defects in plant or equipment.
6. Work in a safe manner at all times. Do not take unnecessary risks which would endanger yourself or others. If possible, remove site hazards yourself, e.g. remove or flatten nails sticking out of timber, tie unsecured access ladders etc.
7. Do not use plant or equipment for work for which it was not intended or if you are not trained or experienced to use it.
8. Warn other employees, particularly new employees and young people, of particular known hazards.
9. Do not play dangerous or practical jokes or "horseplay" on site.
10. Report to supervision any person seen abusing the welfare facilities provided.
11. Report any injury to yourself which results from an accident at work, even if the injury does not stop you working.
12. Report any damage to plant or equipment.
13. Suggest safer methods of working.

## **2.16 SUB-CONTRACTORS**

1. All sub-contractors will be expected to comply with the Company Policy for Health, Safety and Welfare and must ensure their own Company Policy is made available on site whilst work is carried out.
2. All work must be carried out in accordance with the relevant statutory provisions and taking into account the safety of others on the site and the general public.
3. Assessment of risk associated with any substance, process or work activity on site which will be hazardous to health and safety, must be provided to our Contract Management before work commences. Any material or substance brought on site which has health, fire or explosion risks must be used and stored in accordance with Regulations and current recommendations and that information must be provided to any other person who may be affected on site.
4. Scaffolding used by sub-contractor's employees (even when scaffold erected for other contractors) must be inspected by their employer or a competent person appointed by their employer to ensure that it is erected and maintained in accordance with the Regulations and Codes of Practice.
5. Sub-contractor's employees are not permitted to alter any scaffold provided for their use or use or interfere with any plant or equipment on site unless authorised.
6. All plant or equipment brought onto site by sub-contractors must be safe and in good working condition, fitted with any necessary guards and safety devices and with any certificates available for checking. Information and assessment on noise levels of plant, equipment or operations to be carried out by the Sub-contractor must be provided to our company's Site Representative before work commences.
7. No power tools or electrical equipment of greater voltage than 110 volts may be brought onto site. All transformers, generators, extension leads, plugs and sockets must be to latest standards for industrial use, and in good condition.
8. Any injury sustained or damage caused by sub-contractor's employees must be reported immediately to this Company's Site Representative.
9. Sub-contractor's employees must comply with any safety instructions given by this Company's Site Representative.
10. This Company has appointed a Safety Advisor to inspect sites and report on health and safety matters. Sub-contractors informed of any hazards or defects noted during these inspections will be expected to take immediate action. Sub-contractors will provide the Company's Site Representative with the name of the person they have appointed as Safety Supervisor.
11. Suitable welfare facilities and first aid equipment in accordance with the Regulations must be provided by sub-contractors for the employees unless arrangements have been made for the sub-contractor's employees to have the use of this Company's facilities.
12. Sub-contractors are particularly asked to note that workplaces must be kept tidy and all debris, waste materials, etc. cleared as work proceeds.
13. All operatives, sub-contractors, visitors etc. on the Company's sites will wear safety helmets at all times. Signs erected on site that safety helmets to be worn must be complied with by Sub-contractors personnel.
14. A detailed Method Statement will be required from sub-contractors carrying out high risk activities, e.g. steel erection, demolition, roofing, entry into confined spaces, etc. The Method Statement must be agreed with our Company Site Representative before work begins and copies made available on site so that compliance with the agreed Method Statement can be maintained.
15. All sub-contractors with 30 or more persons under his direct control must appoint in writing, a person as a safety officer.



## ***2.17 SAFETY OFFICER***

1. Provides advice, guidance and instruction on all safety matters to all Company employees (including where applicable to Sub-contractors, Suppliers and Visitors to sites).
2. Prepares, agrees with Directors and installs a Company Safety Statement and ensures compliance with Company Policy and Health and Safety Regulations.
3. Liaises with all Company Management Sections and engages all personnel in a united effort in accident prevention and ensuring healthy working conditions.
4. Order work to stop if of the opinion that, any activities represent a serious risk of personal injury to persons in that area.
5. Completes Site Safety Inspections regarding the Safety Statement in liaison with Site Management, recommends improvement plans and reports to the Site Agent & Contracts Manager.
6. Ensures that full co-operation is given to all Safety Representatives that are elected and that adequate time and training is provided for discharge of their duties.
7. Identifies all reasonably foreseeable hazards on new projects or new phases of the Project with the Contract Manager before commencement, assists in preparation of Safety & Health Plan where required and recommends relevant procedures and personal protective equipment.
8. Reviews or follows up where necessary Inspection Reports, Health and Safety suggestions, complaints and requests for information.
9. Carries out Accident Investigation if requested, establishes cause of accident, incident or dangerous occurrence and recommends for future avoidance.
10. Arranges for training of suitable employees on First Aid.
11. Assists in ongoing training of employees as requested.
12. Acquires and distributes Safety, Health and Welfare publicity, literature and materials as necessary.

## ***2.18 EMPLOYEES IN GENERAL***

1. Comply with relevant laws and protect their own safety and health, as well as the safety and health of anyone who may be affected by their acts or omissions at work.
2. Ensures they are not under the influence of any intoxicant to the extent that they could be a danger to themselves or others while at work.
3. Cooperate with their employer with regard to safety, health and welfare at work.
4. Not engage in any improper conduct that could endanger their safety or health or that of any one else.
5. Participate in safety and health training offered by their employer.
6. Make proper use of machinery, tools, substances, etc., and of all personal protective equipment provided for safe use at work.
7. Report any defects in the place of work, equipment, etc., which might endanger safety and health

Part 3: *General Arrangements*

## 3.1 ADMINISTRATION and SETTING UP of SITES

### *3.1.1 MONITORING & REVIEW OF THE SAFETY STATEMENT*

1. All employees will be expected to bring to the notice of their immediate Supervisor any areas where the Company Policy on Health, Safety and Welfare appears to be inadequate. The suggestions will be passed to the Director responsible for safety for consideration.
2. Integrated Risk Solutions Ltd.'s Safety Advisors will visit the Company sites/premises at regular intervals and will report on any hazards, defects or breaches of regulations observed during the visit.
3. A report of the inspection will be left on site and a copy sent to Mr. Vincent Brennan so that it can be established where the appropriate procedures in Company Policy have not been complied with or are deficient and action taken to ensure similar problems do not recur on Company sites.

### ***3.1.2 INCIDENT AND ILL HEALTH REPORTING***

1. All injuries or damage resulting from incidents on site or in other workplaces, however minor, will be reported to and recorded by the Site Manager, Agent or Supervisor.
2. This applies to injuries received by sub-contractors, members of the public, visitors, etc. as well as company employees.
3. In the event of a fatal or major injury to any person or dangerous occurrence the Health & Safety Authority (HSA) must be notified immediately by the Safety Officer, Site Manager, Agent or Supervisor. In the case of an employee of another company being killed or injured this duty is placed on his/her employer.
4. The Safety Officer will ensure that the Health & Safety Authority (HSA) has been informed of fatal or major injury accidents or notifiable dangerous occurrences by telephone, carry out an investigation as soon as possible and confirm details of accidents in writing to the Authority using Form IR1 and IR3.
5. Accident record sheets will be available on site and work place to ensure any injured employee can record details of his accident.
6. The Safety Officer will send a copy of any incident report form received from site or workplaces to Mr. Vincent Brennan.
7. Where any injury to any employee, self employed operative or person undergoing training (other than those reported as in paragraph 2 above) results in the injured person being absent from work for more than 3 days, the Safety Officer will send form IR1/ IR3 to the Authority within 7 days of the incident if details have been received from site/workplaces in accordance with paragraph 1 above.
8. The Safety Officer will send a full report of any incident investigated to Mr. Vincent Brennan together with any photographs, statements or other relevant material for use by Company Insurers or legal advisers. This investigation report is privileged information and must not be issued to any person without the permission of the company insurers or legal advisers.

### **3.1.3 PRELIMINARY PROCEDURES**

#### **a) TENDERING AND PLANNING**

At tendering, negotiation and planning stages, the requirements of this Safety Statement must be taken into account.

Any aspects of work not covered by this Safety Statement must be planned by the site/workplace management in conjunction with advice from the Safety Officer and written procedures defined.

Pre-contract meetings will be held if particular health and safety matters require discussion.

#### **b) TRAINING**

All supervisory staff will receive training in their responsibilities as defined in this Safety Statement. Training will be repeated at 2-yearly intervals and whenever changing legislation or working methods require.

The operatives required to carry out key tasks (e.g. fork lift truck operation, timbering, excavations, scaffolding, abrasive wheel mounting, etc.) will be provided with necessary training.

Training will be arranged by Safety Consultant as requested by management.

#### **c) SUB-CONTRACTORS**

The selection of sub-contractors will take into account their Safety Statement, accident record and previous performance with respect to accident and ill health prevention on site. All subcontractors will be made aware of the Company Safety Statement and of their responsibilities as outlined in the Safety Statement.

#### **d) SUPPLIERS**

All information received from suppliers will be passed to site/workplace supervision for implementation or reference on site.

#### **e) NOTIFICATIONS**

The Site Manager will make any necessary notifications in respect of Fire Certificate, Offices or Ambulance Authority.

The Site Manager will notify relevant Authorities as required by specific Policy Sections, e.g. Underground and Overhead Services, Explosives etc.

#### **f) PROTECTION OF PUBLIC**

All necessary measures for the protection of the public will be allowed for and planned. In particular, taking into account the recommendations contained in Health and Safety Executive Guidance Note GS7, "Accidents to Children on Construction Sites".

## **g) DOCUMENTATION**

Mr. Vincent Brennan will ensure that a complete copy of the Company Safety Statement is issued to the Site/Workplace for reference; also a copy of the current Employers' Liability Insurance Certificate is issued for display.

All necessary statutory notices, Regulations and Registers and Accident Report Forms will be issued to site/workplace. The Site Manager must ensure that all registers, site inspection reports and other documentation relating to health and safety are return to Head Office for safe keeping at the completion of the contract and that the Company Secretary is responsible for ensuring that this documentation is maintained at the office in a safe place for a minimum of three years.

## **h) JOINT CONSULTATION**

At the design stage local authorities, Iarnrod Eireann, etc. will be consulted as to safe working practices and their recommendations will be strictly adhered to.

## **i) PROHIBITION/IMPROVEMENT NOTICES**

Any notices issued by the HSA on site will be enforced immediately and copies sent to Mr. Vincent Brennan and Integrated Risk Solutions Ltd.

## **j) GUIDELINES FOR PRELIMINARY HEALTH AND SAFETY PLAN**

This should include:

1. Name of Client.
2. Location.
3. Site history- desk study.
4. Existing drawings- available drawings of structure(s) to be demolished or incorporated in the proposed structure(s).
5. Significant hazards or work sequences identified by the designers.
6. The principals of the structural design and any precautions which may be needed or sequences of assembly that need to be followed during construction.
7. Detailed reference to specific problems where contractors will be required their proposals for managing these problems.
8. Construction materials-health hazards arising from construction materials where precautions are required either because of there nature or their intended use.
9. Overlap with Clients undertaking- consideration of the health and safety issues which arise when the project is to be located in the premises occupied or partially occupied by the client.
10. Contaminated land- hazardous substances etc. on site.
11. Overhead powerlines- positions of powerlines.
12. Buried services- positions of services.
13. General description of project- nature, scope, location etc.
14. Time schedules for project.
15. Storage tanks- location, type, size, etc.
16. Site access- location, limited/unlimited etc.
17. Ground conditions- will heavy plant be restricted due to ground conditions?
18. Site neighbourhood-will craneage/construction be affected by neighbouring structures
19. Public activities- will the site affect the public.
20. Other sites- are there other sites which may affect this site.
21. Nearby factories- are there nearby factories which could emit fluids /gases/dusts.
22. Local transport- will the construction affect local transport, will construction site be near railroad tracks, roads etc.
23. Noise - will noise on site affect adjacent persons.
24. Other hazards- to be specified.

The preliminary health and safety plan is to be updated on a continuous basis by the project supervisor for construction as necessary.

## **K) GUIDELINES FOR HEALTH AND SAFETY FILE**

Information contained in the file needs to include that which will assist persons carrying out construction work on the structure at any time after completion of the current project and may include:

- (a) record 'as built' drawings and plans used and produced throughout the construction process along with the design criteria;
- (b) general details of the construction methods and materials used;
- (c) details of the structure's equipment and maintenance facilities;
- (d) maintenance procedures and requirements for the structure;
- (e) manuals produced by specialist contractors and suppliers which outline operating and maintenance procedures and schedules for plant and equipment installed as part of the structure; and
- (f) details of the location and nature of utilities and services and their maintenance/isolation, including emergency and fire-fighting systems, equipment, routes, procedures etc.

Other topic headings could include:-

- Details of hazardous substances and safety data sheets;
- Load-bearing details - walls and trusses;
- Foundations;
- Ground substances - Methane, Radon etc.
- Hot water hazards;
- Window, gutter, roof etc. maintenance
- Other maintenance.

## **I) GUIDELINES FOR DESIGNERS**

Some areas which designers should consider are-

1. Placing and "stitching" of roof trusses
2. "Heavy" blocks and lintels
3. Access for electricians, plumbers, etc. before flooring and staircases are installed.
4. Access for future maintenance and cleaning of barge boards, gutters, conservatory roofs, windows, etc.
5. Elimination of the need for maintenance or a reduction in its frequency.

There may be cases where, for various reasons, a risk to safety and health has to be retained. The designer should inform the project supervisor as to the nature of such risks. A list of high risk activities should be drawn up by the designer giving the nature, location, and possible actions.

These may include:

1. Piling.
2. Excavations
3. Site access
4. Use of materials- C.O.S.H.H., L.P.G., flammable liquids, etc.



5. Handling of materials
6. Scaffolding
7. Other high risk activities

**m) CHECKLIST FOR PROJECT SUPERVISOR CONSTRUCTION**

1. Ensure that the Health and Safety Plan is on site
2. Ensure that the effect of the site on its environs has been considered.
3. Make plans to reduce the impact of noisy machinery.
4. If the site is close to public footpaths or rights of way consult with the local authorities and agree suitable means of protection, warning signs and lighting.
5. Securely fence of the site so as to exclude trespassers from the site.
6. Erect general warning signs and signs as to special risks.
7. Clearly mark all underground services so that all contractors are aware of their location.
8. Keep Companys Safety Statement, accident book, registers, form, etc. on site for inspection.
9. Provide suitable first aid facilities for all persons on site and welfare facilities for all operatives on the site.
10. Ensure that all safety and health information required by legislation is available to operatives on site.
11. Make arrangements to provide adequate personal protective equipment sufficient for the numbers of persons on site.
12. Make sure that design drawings for special scaffolds etc. are available on site.
13. Make arrangements to have fire fighting equipment distributed around the site as necessary and ensure that suitable means of escape are provided.
14. Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.

### ***3.1.4 PROCEDURE FOR NEW EMPLOYEES ENGAGED BY COMPANY OR TRANSFERRED TO SITE***

This procedure is to be carried out by the Site Manager of the site where the new employee will be required to work.

1. Explain to the new employee what he/she will be required to do and to whom he/she will be directly responsible.
2. Show the new employee where the Company Safety Statement is kept, explain its purpose and ensure that the employee is aware of his/her responsibility.
3. Ascertain if the new employee has any disability or illness which could prevent him/her carrying out certain operations safely or require additional protective measures.
4. Warn new employees of any potentially dangerous areas of operations on site or in the workplace.
5. Warn new employees of any prohibited actions on site or in the workplace, e.g. entering specific areas without a safety helmet, operating plant unless authorized, etc.
6. If there is any training or instruction required, e.g. abrasive wheels, cartridge tools, scaffold inspection etc., ensure that this training is carried out.
7. Issue to the new employee any protective clothing or equipment necessary, e.g. safety helmet, goggles, ear defenders, wet weather clothing etc., and obtain their signature of the items issued.
8. Show the new employee the location of the first aid box and explain the procedure in the event of an accident, in particular, the necessity to record all accidents, however trivial it may appear at the time.

### **3.1.5 WELFARE AND FIRST AID**

#### **CONTROL MEASURES**

All work will be tendered or negotiated for taking into account the requirements of the above regulations.

The Site Manager will establish the welfare and first aid requirements before work starts, taking into account sub-contractors' requirements if applicable.

If the company is working as a sub-contractor the Site Manager will arrange with the main contractor before Company employees are sent to site that all necessary welfare and first aid arrangements are provided.

or

All sub-contractors will be expected to provide facilities in accordance with the regulations for their employees. These will be provided and maintained to the satisfaction of our Site Management.

All necessary first aid equipment will be supplied.

#### **SPECIAL WELFARE ARRANGEMENTS**

Where short term work is to be carried out on site where the provision of huts or mobile units is not reasonably practicable the minimum of equipment to be carried in vehicles is:

- a) Drinking water container.
- b) Means of boiling water.
- c) Hand cleanser in dispenser.
- d) Paper towels or other suitable means of drying hands.
- e) Storage facilities for protective clothing.
- f) Adequate first aid equipment.

#### **STANDARDS REQUIRED**

The Construction (Safety, Health and Welfare) Regulations 2006 specify minimum requirements for welfare facilities on site.

The Safety Health and Welfare at Work (General Application) Regulations 2007 (Part 2, 18-23) specify minimum requirements for welfare on site. These are summarised as follows;

- Work place is kept in a clean state and refuse and waste is removed by a suitable method.
- The floor of every workplace is cleaned by a suitable method.
- Suitable sitting arrangements are supplied.
- Drinking water is supplied on site.
- Adequate facilities for boiling and taking meals are provided.
- A rest room is provided by the employer.
- An employer shall maintain and keep in a clean state an adequate number of lavatories and washbasins.
- An employer shall provided changing rooms for men and women, and adequate provisions for drying wet or damp work cloths.
- Out door work stations should not be exposed to inclement weather conditions.

### **3.1.6 COMPANY OFFICES**

1. All offices and office facilities will be provided and maintained in accordance with the Safety, Health and Welfare at Work (General Application) Regulations 2007.
2. Fire precautions shall be provided and maintained in accordance with the requirements of the Fire Services Act 1981 and 2003 (No. 30 of 1981 and No.15 of 2003)
3. The Office Manager will ensure that a procedure is drawn up to be followed in the event of fire and that key personnel are given training in the procedures and use of fire fighting equipment. Fire drills will be organised at six monthly intervals, date of drill and comments to be recorded.
4. All fire extinguishers will be provided in accordance with the latest British Standard and will be serviced and maintained at regular intervals as recommended by the manufacturer.
5. The Office Manager will ensure that all office machinery is sited and maintained correctly and is serviced in accordance with the manufacturer's recommendations.
6. All staff required to use office machinery will be given training and instruction in its use.
7. All accesses, stairways, fire exits, etc., will be kept clear of all materials and well lit.
8. Proper facilities will be provided for office staff required to reach items from high shelving.
9. Offices will be planned to avoid trailing cables on floors to office equipment.

### **STANDARD REQUIRED**

The following statutory requirements apply to offices and office work:

Health and Safety at Work Act 2005, General duties of employers, employees, persons who control premises etc.

Safety, Health and Welfare at Work (General Application) Regulations 2007.

Fire Services Act 1981 & 2003.

Copies of appropriate statutory requirements will be kept at the Company Offices.

### ***3.1.7 SITE OFFICES***

1. Where applicable, site offices will comply with the requirements of the Safety, Health and Welfare at Work Act (General Application) Regulations 2007.
2. All fire precautions in accordance with the Regulations shall be supplied and maintained.
3. All fire extinguishers shall comply with the relevant Irish Standards and will be serviced and maintained at regular intervals. Training will be provided to members of staff in their use. IS 125 and IS 290.
4. The Site Supervisor will ensure that all offices are cleaned out daily and wastepaper is not allowed to accumulate.
5. Any liquefied petroleum gas heating appliance shall be used in accordance with the requirements of Company Policy.
6. Any electrical installation shall be to the requirements of the relevant Irish Standards and shall be installed, tested, altered and maintained by qualified electricians only.
7. The Site Supervisor will ensure that any office machinery is installed safely and that it is maintained and serviced in accordance with manufacturer's recommendations.
8. Training will be provided in the use of office machinery and no person may operate or service any machinery unless authorised to do so.

### **3.1.8 SMOKING POLICY**

This Company will comply fully with the provisions of the Public Health (Tobacco) (Amendment) Act 2004.

It is the policy of John Morris Plant Hire management that all enclosed work areas under their control is smoke free. Smoking poses a significant risk to the health of smokers and to non-smokers who are exposed to second hand smoke. This restriction is a 24 hour restriction and includes weekends. Smoking is only permitted outside and Staff must ensure that they carefully extinguish all naked flames, all cigarette ends are fully extinguished when finished and use the bins provided.

European legislation has confirmed that the right to clean air overrides the right to smoke. Any individual found smoking inside an enclosed workspace is liable to disciplinary action  
The national Smokers Quit line number is 1840 201 203

This policy applies to all persons on site (Employees, contractors, visitors etc). Therefore, this policy and associated procedures must be communicated to all staff and in particular to new and part-time staff before they commence employment.

Infringements by staff will be dealt with under company disciplinary procedures. Non-employees who contravene legislation prohibiting smoking in the workplace are liable to criminal prosecution with an associated fine. Breaches of this policy by such persons may result in they being asked to leave and may impact their standing as suppliers/consultants to the company.

Staff responsible for the implementation of the Provisions of the Act:

.....

### 3.1.9 ANTI-BULLYING AND ANTI-HARASSMENT PROCEDURE

Workplace bullying is defined as repeated inappropriate behaviour, direct or indirect, whether verbal, physical or otherwise conducted by one or more persons against another or others at the place of work and/or in the course of employment which could reasonably be regarded as undermining the individual's right to dignity at work. An isolated incident of this behaviour may be an affront to dignity at work but as a once off incident is not considered to be bullying.

Bullying behaviour includes behaviour that may: -

- Humiliate
- Intimidate
- Verbally abuse
- Victimise
- Exclude and isolate
- Give repeated unreasonable assignments to duties which are obviously unfavourable to one individual
- Give repeated impossible deadlines or impossible tasks
- Imply threats
- Include making jokes that are obviously offensive to one individual by spoken word or email.
- Intrude on a persons privacy by pestering, spying and stalking
- Manipulate an individual's reputation by rumour, gossip, ridicule or innuendo.

Sexual harassment is a form of discrimination on the gender ground in relation to conditions of employment.

Sexual harassment includes any:

- Act of physical intimacy
- Request for sexual favours
- Other act or conduct including spoken words, gestures or the production, display or circulation of written words, pictures or other material that is unwelcome and could reasonably be regarded as sexually offensive, humiliating or intimidating.
- A single incident can constitute sexual harassment.

Non-exhaustive list of examples of sexual harassment:

Physical conduct of a sexual nature - unwanted physical contact i.e. unnecessary touching, patting, pinching or brushing against another employee's body, assault & forced sexual intercourse.

Verbal conduct of a sexual nature- unwelcome sexual advances, propositions or pressure for sexual activity, continued suggestions for social activity outside the work place after it has been made clear that such suggestions are unwelcome, unwanted or offensive flirtations, suggestive remarks, innuendos or lewd comments.

Non-verbal conduct of a sexual nature - display of pornographic or sexually suggestive pictures, objects, written materials, emails, text messages or faxes. Can also include leering, whistling or making sexually suggestive gestures.

Sex-based conduct - includes conduct that criticises or ridicules or is intimidatory or physically abusive of an employee because of his or her sex.

Harassment that is based on the following grounds - marital status, family status, sexual orientation, religion, age, disability, race or Traveller community ground - is a form of discrimination in relation to conditions of employment.

The definition of harassment is similar to that of sexual harassment, but without the sexual element. The harassment has to be based on a relevant characteristic of the employee whether it be the employee's marital status, family status, sexual orientation, religious belief, age, disability, race, colour, nationality or ethnic or national origin or membership of the Traveller community.

Harassment is any act or conduct including spoken words, gestures or the production, display or circulation of written words, pictures or other material if the action or conduct is unwelcome to the employee and could reasonably be regarded as offensive, humiliating or intimidating.

Non-exhaustive list of examples of harassment:

Verbal harassment - jokes, comments, ridicule or song.

Written harassment - including faxes, text messages, emails or notices

Physical harassment - jostling, shoving or any form of assault.

Intimidatory harassment - gestures, posturing or threatening poses

Visual displays such as posters, emblems or badges

Isolation or exclusion from social activities

Pressure to behave in a manner that the employee thinks is inappropriate, e.g. being made dress in a manner not suited to a persons ethnic or religious background

#### PROCEDURES:

The following steps will be followed in the case of a complaint on bullying, harassment or sexual harassment:

##### *Informal Procedure*

Where possible the management will initially deal with allegations of bullying, harassment or sexual harassment as informally as possible through this procedure. This procedure aims to resolve the issue with the minimum of conflict and stress for all individuals involved.

If you feel that you are being bullied, harassed or sexually harassed, firstly try to explain to the perpetrator that their behaviour is unacceptable.

If you feel that this is too difficult, then seek the advice of a contact person e.g. any manager or employee representative.

The contact person will listen patiently, be supportive and discuss any options on dealing with the situation with you.

You can request the assistance of the contact person in raising the issue with the alleged bully or harasser. The contact person will approach the situation as a confidential, non-confrontational discussion with a view to resolving the issue in an informal low-key manner.

You can decide not to follow the informal procedure above but instead to follow the formal procedure, this will not reflect negatively on you.

##### *Formal Procedure*

If the above informal procedure has not resolved the situation or the complainant has decided the informal procedure is inappropriate then the following steps will be followed:

If you feel you are being bullied, harassed or sexually harassed and the informal procedure has not resolved the situation or you have decided the informal procedure is inappropriate then you must make a formal complaint in writing to the Manager or immediate superior as appropriate.

As many details as possible should be documented in this formal complaint, i.e. times of bullying/harassment/ sexual harassment, type of bullying/harassment/ sexual harassment, eye witnesses etc

The alleged perpetrator will be notified in writing by the manger/ immediate supervisor, along with a copy of the complainant's statement. The perpetrator will be advised that they will be given a fair opportunity to respond to the allegations.

Any meetings held with regard to the complaint must be minuted.

The manager or supervisor (preferably a person impartial to the complaint) examines the complaint details and determines and appropriate course of action. A course of action could be exploring a mediated solution or a view that the issue can be resolved informally. If either of these approaches will not work, a formal investigation of the complaint will occur, to establish the facts and credibility of the complaint.

##### *Investigation*

The investigation will be conducted by a designated member or members of management or, where appropriate an agreed third party. The investigation will be conducted thoroughly, objectively, with sensitivity; confidentiality and taking into account the rights of the complainant and the alleged perpetrator.

Terms of reference will be agreed by both parties in advance of the investigation and used to govern the proceedings.

In order to establish the facts, the investigator(s) will meet with all parties involved and any witnesses to the incident. The complainant and perpetrator are encouraged to bring along a work colleague or employee/ trade union rep to these interviews.



The investigation will be completed quickly and within a time frame of 2 weeks of reporting of incident. A written report of findings will be submitted to management by the investigator, on completion of investigation.

The perpetrator and complainant will be issued with written details of the findings, and given an opportunity to comment before management decide on action to be taken.

#### Outcome

If management decide that the complaint is genuine, the alleged perpetrator is called in for a formal interview to decide on action to be taken e.g. counselling, monitoring, progressing issue through our disciplinary and grievance procedure.

If either party is unsatisfied with the outcome of the investigation, the issue will be processed through the proper industrial relations mechanisms.

If the complaint is upheld against a non-employee, the report will detail appropriate actions against the non-employee or his/her employer, which may include: prohibiting the individual from entering the premises, suspension or termination of services or contract. A non-employee accused of bullying, harassment or sexual harassment will be kept informed of all developments and allowed an opportunity to respond to them. The outcome and any actions will also be explained to non-employee and/ or their employer.

#### *Harassment and Sexual Harassment Timeframes*

A complaint of harassment or sexual harassment may be made to the Office of the Director of Equality Investigations who can refer the complaint to an Equality Officer or, with the parties' agreement for mediation.

All dismissal claims (including constructive dismissal) under the Employment Equality Act 1998 are heard at the Labour court.

In sexual harassment claims (and all gender claims) an employee may bypass either of the above and refer the matter to the Circuit Court.

A complaint must be made within 6 months of the alleged incident of sexual harassment or harassment or the latest incident of such harassment. This may be extended up to 12 months where exceptional circumstances prevented the making of the complaint within the 6 months.

An employee is entitled to seek "material information" from their employer about alleged acts of sexual harassment or harassment or the employer's failure to deal with them or about relevant procedures. There is no obligation on the employer to provide such information.

### 3.1.10 USE OF WORK EQUIPMENT

- 1 The employer shall ensure that employees adequate information at their disposal information concerning the condition of the use of work equipment, foreseeable abnormal situations and conclusions to be drawn from experience, where appropriate, in using such work equipment.
- 2 The employer shall ensure where the work equipment depends on installation conditions- an initial inspection is carried out before it is put into use. The employer should also carry out periodic inspections and keep available the records for five years.
- 3 The employer shall ensure that adequate maintenance is carried out and a maintenance log for any machine is kept up to date.
- 4 The employer should ensure that control devices which affect work equipment are clearly visible, are located outside danger zones.
- 5 All work equipment is fitted with a control to stop the work equipment.
- 6 The employer shall ensure that work equipment is fitted with appropriate safety devices, containment devices, extraction devices near the source of the hazard.
- 7 All work equipment is fitted with identifiable means to isolate its energy source.
- 8 Combustion engines should not be used in an enclosed area unless there is adequate ventilation to prevent danger to health from fumes.
- 9 The employer shall ensure that self propelled work equipment is only operated by competent persons. The equipment should have facilities for preventing unauthorised start ups, has a device for braking and stopping equipment, has adequate auxiliary devices, adequate lighting, adequate fire fighting equipment.
- 10 An employer shall ensure that traffic rules are drawn up and followed.

### 3.1.11 DISPLAY SCREEN EQUIPMENT

Duties of employer;

- 1 An employer shall ensure that the display screen equipment is not a source of risk for the employee.
- 2 Carry out an assessment of the work stations in relation to the minimum requirements specified in schedule 4 of the General Application regulations 2007.
- 3 Plan the works to reduce the workload on display screen equipment (periodic breaks).
- 4 Perform an analysis of the workstation if an employee is transferred or if new technology is introduced.
- 5 Take into account any entitlements which an employee may have to any tests and appliances provided by the state relating to eyesight and appliances.

## 3.2 GENERAL HAZARDS

### 3.2.1 OVERHEAD ELECTRICITY CABLES

#### HAZARDS

The main hazards are contact with the lines by plant or vehicles or by Operatives handling long objects, e.g. scaffold tube, cladding sheet, ladder, etc.

The fact that electricity can "arc" across gaps must always be taken into account.

In certain situations, capacitated or induced alternating current voltages can be created in fences and pipelines which run parallel to overhead lines carrying a voltage of more than 30kv.

#### CONTROL MEASURES

Where work directly beneath lines has to be carried out or for blasting or other unusual activity near overhead lines, the lines may need to be made dead and a Permit to Work system operated.

At the planning stage, the existence of any overhead lines will be noted and allowed for in accordance with the standards below.

At pre-contract or pre-commencement stage, the Site Manager will arrange for any necessary diversions or confirm safe distances, clearances, precautions, etc. with the Electricity Supply Board.

All Contractors likely to be affected will be informed of any overhead lines on the site.

The Site Supervisor will ensure that the necessary protection is erected in accordance with the standards below.

The protection provided will be checked by the Site Supervisor or other responsible appointed person at regular intervals and maintained.

Appropriate action must be taken against any person(s) who disregards or damages protection provided.

#### STANDARDS REQUIRED

Safety, Health and Welfare at Work (General Application) Regulations 2007

ESB "Avoidance of Danger from Overhead Electric Lines" gives guidance on the precautions to be taken and will be complied with on sites or is expected to be complied with on sites on which employees are required to work.

B.S. Code of Practice 3010:1972, "Safe Use of Cranes", also gives advice on precautions which will be complied with.

Copies of the Regulations will be available where required.

### **3.2.2 ROADWORKS**

#### **HAZARDS**

The main hazards associated with roadworks are:

- Inadequate information for traffic.
- Operatives, plant, transport outside working areas, safety zones or signed areas.
- Pedestrians not protected.
- Where lifting appliances are used on road works, safety helmets will be worn by personnel.

Department of the Environment booklet outlining signs to be used at road works will be used by Engineers and Supervisors.

#### **CONTROL MEASURES**

At the planning stage, the requirements of the relevant standards will be taken into account.

The Contracts Manager will ensure that consultation with the Gardai takes place before work commences.

The Contracts Manager will ensure that the following arrangements for roadworks are planned taking into account the consultations carried out and the above standards:

Sufficient road signs, traffic cones, lamps, signals, etc. of the correct type and size taking into account an adequate safety zone between working areas and traffic.

Plant and vehicles are suitably painted or marked for road works and are fitted with amber flashing lights and warning devices for use when reversing, when practicable.

Protective clothing and equipment for operatives including fluorescent/retro-reflective jackets, slipovers or similar.

Protection for pedestrians.

Adequate labour for signing, cleaning signs, attending to lamps, signals, etc.

Training for operatives, Supervisors, plant operators, etc.

#### **SUPERVISION**

The Site Supervisor will ensure that all arrangements for signing, lamps, cones, signals, safety zones etc. are carried out as planned and that regular checking takes place throughout the working period to clean, replace and reposition traffic safety measures as necessary.

The Site Supervisor will ensure that personnel are issued with any necessary protective clothing and equipment and that fluorescent/retro-reflective items are worn at all times in the working areas.

The Site Supervisor will ensure that all plant and transport is suitable for use on road works, is operated only by trained and authorised personnel and that any defects noted or reported are rectified. Where defects could affect the safe use of the equipment, it must be taken out of use immediately.

The Site Supervisor will ensure that work is carried out as planned and that any additional requirements requested by the Gardai during the works carried out.

#### **STANDARDS REQUIRED**

Roadworks will be planned and carried out in accordance with the following:

- Current Traffic Signs Regulations.
- Department of the Environment Guidelines.

### **3.2.3 LIQUEFIED PETROLEUM GAS**

#### **HAZARD**

The main hazards associated with the use and carriage of LPG are:

- Fire.
- Explosion
- Asphyxia

#### **CONTROL MEASURES**

At tender or negotiation stage, the requirements for liquefied petroleum gases and either compressed gases will be noted and allowed for in accordance with the above standards.

The Contracts Manager will ensure that the provision, installation or equipment and storage facilities for liquefied petroleum gases and any other compressed gases that will be used on site/workplace are planned in accordance with the above standards and that, where necessary, liaison takes place with the local Fire Brigade to establish safe storage and siting facilities.

The Contracts Manager will ensure that sub-contractors' requirements are taken into account when planning the use of LPG and storage facilities to be provided on site.

If working as sub-contractor, Contracts Manager will ensure suitable facilities are provide by the main contractor for the use and storage of LPG or other compressed gases to be used by company employees on site before company employees are sent to site.

The Contracts Manager will ensure that any necessary training in the safe working practices or emergency procedures associated with LPG or compressed gases is arranged and carried out before work starts.

#### **SUPERVISION**

The Site Supervisor will ensure that the planned storage facilities are erected and maintained in accordance with the relevant standards.

The Site Supervisor will check all storage facilities, appliances, hoses, fittings, connections, fire fighting equipment etc. at weekly intervals and ensure that action is taken to rectify any defects noted.

Appropriate action must be taken against any person who disregards any instructions given on the safe use and storage of LPG or compressed gases or who misuses equipment provided.

#### **STANDARDS REQUIRED**

The Dangerous Substances Act 1972.

I.S. 3213:1987 covers the safe handling and storage in detail.

### ***3.2.4 WORK ON OR ADJACENT TO IARNROD EIREANN PROPERTY***

#### **HAZARDS**

The main hazards associated with work on railway lines include:

- Rail traffic
- Contact with live electrical apparatus (i.e. conductor rails, overhead lines)
- Access for work at heights and obstruction of tracks with materials, equipment, debris.
- Dangers associated with trapping in rails.

#### **CONTROL MEASURES**

At tender or negotiation stage the special requirements of Iarnrod Eireann will be noted and provision for their implementation will be allowed for.

Obtain permission before starting work near the track and ensure where necessary written assurance/permits obtained from Iarnrod Eireann detailing, where applicable, the insulation, earthing or making safe of electrical apparatus.

Ensure that permission is obtained and working procedures are agreed for the use of cranes, any other mechanical plant/equipment or any excavation work.

The Site Manager will ensure that the following arrangements are planned taking into account the consultation carried out with Iarnrod Eireann:

Work areas are clearly designated and no one is required to stray outside.

Ensure that all instructions given by the Iarnrod Eireann flagman are strictly adhered to.

Ensure that personnel are issued with the necessary protective clothing/equipment and that high visibility clothing is worn at all times.

Ensure that the work area is kept tidy and that equipment/materials are not permitted to fall on or obstruct the track.

At the beginning of the contract all personnel on site will be instructed of the dangers of working beside a rail track and that anyone in breach of procedures will be immediately subject to disciplinary action.

### ***3.2.5 ELECTRICITY***

An employer shall ensure that all electrical equipment and electrical installations are designed, constructed, installed, maintained, protected and used so as to prevent danger.

Electrical equipment which is exposed to adverse environments is constructed, installed, maintained and modified so as to prevent danger arising from the exposure.

An employer shall ensure that all electrical equipment is suitably identified where necessary to prevent danger.

An employer shall ensure that all live parts are which may cause danger are suitably covered with insulating material.

An employer shall ensure that a new electrical installation, after completion, is inspected and tested by a competent person and a report of the test is completed verifying that the relevant requirements of this part have been complied with.

### **3.2.6 BORD GAIS**

The following can occur in relation to Bord Gais mains;

Potential loss of life

Damage to the gas network

Delays or disruptions to works.

#### **Pre-Excavation**

The supervisor of the works must carry out the following;

- Obtain the most recent Gas Record Drawings
- Marks all service on the ground (observe meter boxes).
- Observe existing or old valve covers to confirm utility records.
- Trial holes should be dug by hand to confirm the position and depth of the pipe.

#### **During Excavation**

Pneumatic or mechanical tools should only be used to break the solid surfacing where trial holes are to be dug. Hand tools are to be used for the remainder.

Services less than 63mm are not shown on drawings and hence a banksman needs to accompany the bulk excavators.

Mechanical excavation is not permitted within one meter of the established position.

Hand held power tools are not permitted within half a meter of a gas main.

Piling operations shall not be permitted within 15 meters of a gas main.

Welding operations shall not be carried out without consent from the Gas Board before works commence.

When laying a new service a minimum of 300mm should be left between the outside of the main and the new service to be installed.

All operatives should be aware of the Bord Gais National 24-hour Emergency Number (1800 20 50 50).

#### **Emergency Procedures**

Report all damage even if there is no smell of gas.

Shut down all working plant in the area of damage.

Keep people away from the affected area

Prevent all sources of ignition

Do not use mobile phones.

Contact the emergency number.



### ***3.2.7 ASBESTOS***

The supervisor should carry out a risk assessment so as to whether asbestos or materials containing asbestos is present.

The supervisor should identify the type of asbestos, identify the condition of the asbestos, records and retain every risk assessment in a permanent form.

The risk assessment should be reviewed regularly when the risk assessment is incorrect or when the risk assessment is no longer valid.

The supervisor should limit the number of employees exposed. The supervisor should ensure that the work process is designed to reduce or limit the amount of asbestos dust in the air.

The supervisor should ensure that the material is stored and transported in suitable sealed packing. The package material should be collected and disposed off by a competent contractor.

The supervisor should ensure that the work area is clearly demarcated with warning signs.

The supervisor should ensure that appropriate PPE is worn, that employees should not smoke in the area, and that employees are provided with appropriate individual respiratory protective equipment.

The supervisor should notify the H.S.A. 28 days in advance of works involved with asbestos.

## 3.3 ACCESS / WORK AT HEIGHTS

### 3.3.1 SITE TIDINESS

#### HAZARDS

- Fire
- Tripping
- Collapse of Stored Material
- Restricted or Blocked Access
- Health Risks Falling Materials

#### CONTROL MEASURES

All work will be tendered for or negotiated taking into account the labour requirement and plant required to comply with the relevant standards.

The Site Manager will ensure that before the site commences, access routes are planned, deliveries are programmed to ensure that excess materials are not stored on site, storage areas are defined, compounds are planned and sub-contractors are made aware of the Company requirements with regard to storage, clearing up, tidiness, etc.

The Site Manager will ensure that before Company employees are sent to site under the overall control of another contractor, arrangements are made for storage areas and that safe access and places of work will be available for employees to carry out their work safely.

#### SUPERVISION

The Site Supervisor will ensure that all sub-contractors and operatives are made aware of the need to maintain the site in a tidy condition throughout the contract.

The Site Supervisor will ensure that stacking areas are prepared and that materials are called off in quantities which will not create difficulties on site.

When John Morris Plant Hire are working as sub-contractor, the Site Supervisor will ensure that working areas and accesses on site where employees are required to work are safe.

The Supervisor will ensure that all waste materials are cleared and disposed of safely as work proceeds. All materials delivered to site for us will be stored safely ensuring that accesses are not obstructed.

All openings in floors must be securely covered or be clearly marked to show that there is an opening below.

Debris and materials must not be thrown or dropped from scaffolds or buildings unless a chute is provided or other suitable safe method used.

The Site Supervisor will arrange for sufficient labour and plant to enable clearing up and maintenance of safe accesses, cleaning of welfare facilities etc. to be carried out in accordance with these standards.

### **3.3.2 SCAFFOLDING**

#### **HAZARDS**

- Collapse of scaffolding.
- Persons falling from height.
- Falls of materials.
- Overhead Electrical cables
- Unauthorised access to scaffolding.
- Untrained erectors

#### **CONTROL MEASURES**

All Scaffolders must be properly trained and certified.

All scaffolds must be tied in accordance with the Code of Practice requirements. Where the provision of ties is impracticable, then the method of ensuring that the scaffold is adequately supported must be clearly specified and recorded.

Any scaffold being erected, altered or dismantled or otherwise not suitable for use by employees must have a notice erected warning that it is not to be used.

All scaffolds must be checked at the end of each working day to ensure that access to the scaffold by children has been prevented.

At planning stage, as far as possible, the scaffolding requirements for a contract will be determined and allowed for in accordance with the above standards.

The Site Manager will arrange for full details to be provided to the scaffolding sub-contractor or scaffolders about the use and loading of scaffold to be erected.

Training will be provided for Supervisors required to inspect scaffolds and for operatives erecting, alerting or dismantling scaffolds up to 5 metres high.

#### **SUPERVISION**

The Site Supervisor will ensure that all scaffolds are erected in accordance with the standards required and at the beginning of each week he will inspect the scaffold and ensure that any defect is rectified. A report of the inspection and action taken will be entered in the site inspection register WH1. A similar inspection will also be carried out after high winds or other adverse weather conditions.

All materials used for scaffolding will be provided in accordance with the relevant standards and will be checked before use by a trained Scaffolders. All materials will be properly stored and maintained on site.

No person other than a competent scaffolder will be permitted to alter, erect, dismantle or otherwise interfere with any scaffold erected on Company sites or for use by Company Employees.

The Site Supervisor will ensure that all scaffolds are erected on ground or surfaces that have been prepared, levelled and consolidated.

### **3.3.3 MOBILE TOWER SCAFFOLDS**

#### **HAZARDS**

- Fall of persons or materials from the platform.
- Overturning due to overloading, uneven ground, wind.
- Not stabilised or secured to suitable fixture.
- Contact with overhead power lines.
- Insufficient ladders to provide proper access to all work platforms on the scaffold.
- Easy access for children to climb on scaffold.

#### **CONTROL MEASURES**

The following precautions must be complied with:

- Height must be relative to effective base dimension. (Normally a maximum height to least base dimension ratio of 3.5 to 1 is specified for towers used inside a building and 3 to 1 used outside. However, lower ratios may be specified by manufacturers of very light mobile towers).
- Outriggers or stabilisers must be extended where applicable.
- Tower must not be used or moved on sloping, uneven or obstructed surfaces.
- Tower must be vertical
- Tower must be tied to building where required.
- Tower must be moved from ground level.
- Floor must be free from openings, ducts, steps etc.
- No person to remain on platform whilst being moved.
- Materials and tools to be removed or secured on platform.
- Overhead obstructions must be noted (in particular, overhead electricity cables).
- Bracing members must be fitted.
- Guard rails and toe boards must be fitted.
- Wheels must be locked when platform in use.
- Tower must not be used in adverse weather.
- Safe working load of platform must not be exceeded.
- When mobile tower scaffolds are not in use, measures must be taken to ensure that children cannot reach or climb scaffolds.
- The Site Manager will ensure that mobile tower can be used safely and efficiently on site taking into account floors, ceiling heights, roof members, type of work etc. Training will be provided to Supervisors required to carry out inspections.

## **SUPERVISION**

All mobile towers will be erected by formally trained Operatives or by Operatives under the direct supervision of a formally trained person.

No person is permitted to erect, alter or dismantle any mobile tower scaffold unless authorised by Site Supervisor. All mobile towers will be checked before use by the Site Supervisor to ensure they are in accordance with the standards required. All operatives required to use mobile tower scaffolds will be instructed in safe use and movement of scaffolds.

All mobile tower scaffolds will be inspected at 7 day intervals by Site Supervisor and a record of inspection will be kept on site.

### **3.3.4 LADDERS**

#### **HAZARDS**

The main hazards associated with ladders are:-

- Incorrect lifting procedure.
- Not securing the ladder properly.
- Unsafe use of ladder (over-reaching, sliding down etc.)
- Using ladder where a safer method should be provided.
- Using ladder with a defect. (Note: Painting of timber ladders which could hide defects is prohibited by Regulations).
- Unsuitable base to ladder.
- Unsuitable handhold at top of ladder or at stepping off position.
- Insufficient foothold at each rung.
- Using ladder near overhead electrical cables, crane contacts etc.
- Ladder at unsuitable angle, swaying, springing, etc. (Recommend angle 1 in 4 or 75 degrees).
- Insufficient overlap of extension ladders.

#### **CONTROL MEASURES**

Ladders will be removed to storage or made inaccessible by some means at the end of each working day to ensure that unauthorised access to scaffolds etc. by others, particularly children, is prevented.

Under no circumstance is a ladder constructed from timber nailed or screwed together to be used on site.

At the planning stage, the requirements of the relevant standards will be allowed for.

The Site Manager will arrange for the required number and type of ladders to be provided taking into account the standards above the work to be carried out.

The means of securing ladders will be planned as far as possible and sufficient materials made available,

#### **SUPERVISION**

Ladders will be checked by the Supervisor before use to ensure that there are no defects and will be checked at least weekly whilst in use on site.

Where a defect is noted or a ladder is damaged, it will be taken out of use immediately.

Supervisors will check that ladders in use are secured, have a solid level base and are being used correctly.

Ladders will not be used to provide access or a working position if the type of work cannot be carried out safely from a ladder (e.g. carrying large items, work requiring both hands, etc.)

Methods of use which will result in damage to the ladder will not be permitted, e.g. securing ladder with scaffold clip, placing board on rung to form working platform or ramp etc.

Supervisors will ensure that proper storage is provided for ladders, under cover, where possible and with the ladder properly supported throughout length.

### **3.3.5 STEPLADDERS, TRESTLES AND STAGINGS**

#### **HAZARDS**

The main hazards associated with stepladders, trestles and stagings are:

- Unsuitable base, e.g. unlevel, packing pieces, loose material, etc.
- Unsafe use of equipment (on scaffold platforms, roof etc. where special precautions not taken).
- Overloading.
- Use of equipment where a safer method should be provided.
- Excessive span of scaffold boards when used with trestles. (Must not exceed 1.5 metres where 38mm thick boards used).
- Overhang of boards or staging at support ("trap ends").
- Using defective equipment.  
(Note: Painting of timber stepladders, trestles, stagings, etc. which could hide defects is prohibited by regulations).

#### **CONTROL MEASURES**

At tender or negotiation stage, the requirements of the above standards will be allowed for.

The Contracts Manager will arrange for the required numbers and types of equipment to be provided taking into account the work to be carried out and the standards above.

Training provided to Supervisors and operatives will include the hazards and precautions relating to this equipment and its use.

#### **SUPERVISION**

All equipment will be checked by the Supervisor before use to ensure that there are no defects and will be checked at least weekly whilst in use on site.

Where a defect is noted, or the equipment is damaged, it will be taken out of use immediately. Any repairs will be carried out by competent persons only.

Supervisors will check that the equipment is being used correctly and not being used where a safer method should be provided.

Where stagings are being used in roof areas, supported from roof members ("Flying Battens"), Supervisors will ensure that only experienced operatives are permitted to carry out this work and that all necessary safety harnesses, anchorage points, etc. are provided and used.

Supervisors will ensure that proper storage is provided for step-ladders, trestles or stagings, undercover where possible.

### **3.3.6 WORK ON OR ADJACENT TO WATER**

#### **HAZARDS**

The main hazards associated with these activities include:

- Falls from height
- Drowning

#### **CONTROL MEASURES**

The main precautions to be taken are to ensure that persons do not fall into water by the provision of barriers, fencing, safety harnesses, covers to openings etc. These precautions must also protect the safety of the public, especially children.

At tender or negotiation stage, the requirements of the above standards will be allowed for.

The Contracts Manager will ensure that the following arrangements are planned before work commences:

- Suitable fencing or barriers.
- Life belts, safety lines.
- Rescue boat, buoyancy aids or life jackets, and life buoy.
- Suitable training for operatives and Supervisors.

Where transport by water is required, the Contracts Manager will also arrange for:

- Suitable boats taking into account numbers of persons and loads to be carried.
- Safe landing stages.
- Maintenance of boats.
- Life jackets
- Training for boatmen, operatives, supervisors.

#### **SUPERVISION**

The Site Supervisor will ensure that all barriers, fencing and rescue equipment is provided before any work commences which could place personnel at risk from drowning.

The Site Supervisor will ensure that only authorised personnel alter barriers, operate rescue equipment, boats, etc. The Site Supervisor will ensure that all rescue equipment is checked regularly and that any defective equipment is repaired or replaced immediately.

The Site Supervisor will ensure that personnel appointed as rescue team are available during the working period and that replacement personnel are selective where necessary.



### **3.3.7 TILED/SLATED ROOFS**

#### **HAZARDS**

The main hazards associated with work on tiled/slanted roofs are:

- Falls from edge of the roof.
- Falls between rafters/trusses of roofs before tiles/slanted fixed.
- Materials, tools falling from roof.
- Contact with overhead electric cables (see separate section).
- Falls through roof lights.
- All personnel required to work near or below roof tiling/slating operations must wear safety helmets. (Note: Precautions must be taken to prevent materials falling from roof).
- Access to the roof must be prevented to unauthorised persons, particularly children, after working hours.

#### **CONTROL MEASURES**

At tender or negotiation stage, the requirements of the above standards will be allowed for.

The Contracts Manager will ensure that the following arrangements are planned:

- Edge protection barriers or scaffolds to prevent falls.
- Protection for the public or other operatives who may be at risk.
- Safe means of access to the roof
- Where necessary, roof ladders, staging, etc. to provide safe access to the roof taking into account pitch of roof, surface conditions, roof lights, etc.
- Short duration work will also be carefully planned to identify hazards and arrange equipment as necessary.
- Training will be provided for Supervisors and operatives required to work on roofs.

#### **SUPERVISION**

The Site Supervisor will not permit work to commence on a roof until the planned safety precautions have been provided.

Materials must not be dropped or thrown down from roofs other than by means of a chute or suitable safe methods.

Timber battens must not be used as a foothold for access on a roof if they are fixed to rafters or trusses more than 400mm apart or not of the required quality.

Only properly constructed roof ladders are to be used which do not rely for anchorage on the ridge capping or ridge tile.

Work on roofs must not be permitted when high winds or gusting is experienced. The roof surface must be checked at the commencement of work and after rain, frost or snow.

### **3.3.8 FLAT ROOFS**

#### **HAZARDS**

The main hazards associated with work on flat roofs are:

- Falls from the edge of roof.
- Materials falling from the roof.
- Falls through roof lights or openings.
- Fires from unsafe use of gas torches, bitumen boilers etc.
- Contact with overhead electric cables.
- Collapse of roof due to overloading.

All personnel working near to flat roof must wear safety helmets.  
(Note: Precautions must be taken to prevent materials falling from roof).

Access to the roof must be prevented to unauthorised persons, particularly children.

Where unusual roof shapes, work over water or industrial processes are involved, Integrated Risk Solutions Ltd., will be involved at an early stage.

#### **CONTROL MEASURES**

At tender or negotiation stage, the requirements of the above standards will be allowed for.

The Contracts Manager will ensure that the following arrangements are planned before work commences:

- Edge protection barriers or scaffolds to prevent falls.
- Barriers, covers, etc. to prevent falls through lights or openings.
- Protection for the public or others at risk.
- Safe access to roof.
- Safe access to working areas on the roof
- Suitable means of raising or lowering materials.
- If appropriate, fire protection methods and fire fighting equipment.
- Safe methods of work to prevent falls through open joisting or from working edge.
- Maximum permitted loadings on flat roof for stacking of materials, bitumen boiler or other items.
- Where repairs, maintenance or demolition of flat roofs is to be carried out, the Contracts Manager, in addition to the above, will ensure that a survey is carried out to establish the condition of existing permanent access ladders, roof edge barriers etc. A Method Statement will be prepared detailing the above.
- Training will be provided for Supervisors and operatives involved in flat roof work.

#### **SUPERVISION**

The Site Supervisor will not permit work to commence on a roof until the planned safety precautions have been provided in accordance with the Method Statement.

"Fragile Roof" notices must be displayed at access points to the roof, where applicable.

Work on roofs must not be permitted during periods of high winds or gusting.

The roof surface must be checked before work recommences after high winds, rain, frost, snow etc.

Any temporary coverings over openings or roof lights must be securely fixed or have a notice fixed to the cover warning that there is a hole below.

Materials must not be dropped or thrown down from roofs unless precautions are taken i.e. chute.

All waste bitumen, felt, paper, etc. must be disposed of safely as work proceeds.

Bitumen boilers used on roof must be placed on a section of roof able to take its weight and be insulated from roof surface. Fire extinguishers must be available on roof. LPG supply hose must not be less than 3 metres long. Boilers must not be left unattended on roof when lit. Lid of boiler must be kept in closed position when in use. Protective clothing must be issued to operatives to prevent burns.

The Site Supervisor will check that all barriers, accesses, covers, fire fighting arrangements, etc. are maintained throughout the working period.

### **3.3.9 FLAT ROOFS (BITUMEN/ASPHALT)**

#### **HAZARDS**

The main hazards associated with work on flat roofs are:

- Falls from the edge of the roof.
- Materials falling from the roof.
- Falls through roof lights or openings.
- Fires from unsafe use of gas torches, bitumen boilers, etc.
- Contact with overhead electric cables.
- Collapse of roof due to overloading.

All personnel working near to flat roof work must wear safety helmets. (Note: Precautions must be taken to prevent materials falling from roof)

Notices warning of "Fragile Roofs" and "Hole Below" should be used.

Access to the roof must be prevented to unauthorised persons, particularly children.

Where unusual roof shapes, work over water or industrial processes or other unusual factors are involved, advice will be sought at an early stage.

#### **CONTROL MEASURES**

At planning stage, the requirements of the relevant standards will be allowed for.

The Contracts Manager will ensure that the following arrangements are planned before commences:

- Edge protection barriers or scaffolds to prevent falls.
- Barriers, covers, etc. to prevent falls through lights or openings.
- Protection for the public or others at risk.
- Safe accesses to roof.
- Safe access to working areas on the roof.
- Suitable means of raising or lowering materials.
- If appropriate, fire protection methods and fire fighting equipment.
- Safe methods of work to prevent falls through open joisting or from working edge.
- Maximum permitted loading on flat roof for stacking of materials bitumen boiler or other items.
- Where repairs, maintenance or demolition of flat roofs is to be carried out, the Contracts Manager, in addition to the above, will ensure that a survey is carried out to establish the condition of the roof, position of roof lights and other fragile material, condition of existing permanent access ladders, roof edge barriers.

#### **SAFETY CHECKPOINTS - FIRE HAZARDS - SETTING UP**

Stand the boiler on a firm, level surface.

Set up the gas cylinders at least 3m away.

Don't use more cylinders than you need.

Make sure that gas hoses are properly connected and in good condition.

### Don't smoke

Keep other ignition sources away, such as naked flames; electrical equipment.

Have a fire extinguisher close by (preferably foam or dry powder).

## **HEATING**

Follow the maker's instructions on lighting up.

If a thermometer is fitted, don't exceed the recommended operation temperature.

Avoid splashing when adding more bitumen.

Keep water away from hot bitumen.

## **USE**

Use the draw-off tap to remove bitumen, never a ladle.

Wear safety glasses and gloves.

Keep the lid on the boiler as much as possible.

Regularly check the boiler temperature and level.

Keep bitumen away from ignition sources.

Carry bitumen in proper containers, e.g. lidded buckets.

Have a clear, safe route from the boiler to where the bitumen is used.

## **AFTER USE**

Turn off the gas at the cylinders.

Empty the boiler and remove drips or splashes from the outside.

## **AT ALL TIMES**

Make sure the boiler doesn't overheat or run low.

Turn the gas off before leaving the boiler unattended, even for a short time.

Never apply direct heat to pipes or valves, or to the outside of the boiler.

Turn off the burner before towing the boiler on a lorry or trailer.

## **HEALTH PRECAUTIONS**

Keep bituminous materials off the skin; prolonged and repeated contact must be avoided.

Wear suitable protective clothing, especially gloves, and do not wear heavily soiled garments. Dry cleaning is recommended for cleaning soiled clothing.

Do not put dirty rags or tools in pocket.

Remove bitumen contamination from skin by thorough washing with skin cleanser and warm water, and wash hands thoroughly before going to the toilet, or eating or drinking. The use of degreasing fluids and petroleum products such as petrol, kerosene or solvents should be prohibited for skin cleansing purposes. Barrier creams applied to the clean skin prior to work assist in subsequent cleansing when accidental contact has occurred.

Seek medical advice should any skin changes be noticed, especially in areas exposed to contact with bitumen. Particular attention must be paid to warts and sores, especially those that develop on the scrotum. Any delay is dangerous.

Avoid breathing asphalt fumes.

## **SUPERVISION**

The Site Supervisor will not permit work to commence on a roof until the planned safety precautions have been provided.

“Fragile Roof” notices must be displayed at access points to the roof, where applicable.

Work on roofs must not be permitted during periods of high winds or gusting.

The roof surface must be checked before work recommences after high winds, rain, frost, snow, etc.

Any temporary coverings over openings or roof lights must be securely fixed or have a notice fixed to the cover warning that there is a hole below.

Materials must not be dropped or thrown down from roofs unless precautions are taken, i.e. chute.

All waste bitumen, felt, paper, etc. must be disposed of safely as work proceeds.

Bitumen boilers if used on roof must be placed on a section of roof able to take its weight and be insulated from roof surface. Fire extinguishers and sand must be available on roof. LPG supply hose must not be less than 3 metres long. Boiler must not be left unattended on roof when lit. Lid of boiler must be kept in closed position when in use. Protective clothing must be issued to operatives to prevent burns.

The Site Supervisor will check that all barriers, accesses, covers, fire fighting arrangements, etc. are maintained throughout the working period.

## 3.4 PLANT AND EQUIPMENT

### 3.4.1 PLANT ON SITE

#### HAZARDS

Hazards with the use of plant arise out of:-

- Unskilled operation.
- Incorrect use.
- Poor maintenance.
- Reversing unsupervised.
- Defects in machine unchecked.
- Noise (see separate section).

#### CONTROL MEASURES

All Banksmen, Supervisory staff and Operatives required to enter earthmoving areas will be provided with high visibility waistcoats or belts.

Plant operators must not drink alcohol during the working day or shift.

Children must not be permitted to enter working areas while plant is in use and all necessary measures required to avoid hazards to children on the site outside working hours must be taken, particularly if it is not possible to fully fence the site.

Stability of plant should be considered when working on peat, soft ground or other unstable ground conditions to ensure that plant does not tip over or sink etc. There may be a requirement for the provision of such safeguards as excavator mats or for ground stabilisation techniques.

All work will be planned in accordance with the required standards.

The Site Manager will take all aspects of the work into account to ensure that sufficient information is provided to the hire company or Machinery Supervisor to enable the correct type of plant to be provided.

The Site Manager will ensure that competent Operators and Banksmen are provided or that, where necessary, full training and instruction is arranged.

The Site Manager will determine whether any preparatory work is required for the installation or use of plant on site and ensure that any requirements are planned, e.g. fork lift truck storage areas, loading towers, solid base for mobile cranes, tower crane base, mixer set-up, fuel storage, road crossing, etc.

Special consideration should be given to the stability of plant when working on peat or other unstable ground to ensure that the loading can be supported adequately.

All plant to comply with Schedule 6 of the 2006 Construction Regulation (Vehicles requiring auxiliary devices and visual aids).

#### SUPERVISION

The Site Supervisor will ensure that plant delivered to site is in good order and fitted with any necessary safety devices and guards.

Any defects noted will be reported to the hire company immediately.

The Site Supervisor will ensure that only authorised Operators are permitted to operate any item of plant. Where any doubt of the competency of an Operator exists, the Site Supervisor will report to the appropriate Engineer or hire company immediately.

No young person (under 18 years old) is permitted to operate any item of plant or act as Banksman unless being trained and under direct supervision.

All plant will be properly secured and immobilised at the end of each day.

All necessary testing and thorough examination certificates will be requested and checked by the Site Supervisor and all items of plant, requiring weekly inspections by Operator or other competent person, will have the inspection recorded in the site register regardless of any register kept by the Operator or plant hire company.

The Supervisor will ensure that any necessary preparatory work required to enable plant to be installed or used correctly is carried out in accordance with specific requirements.

The Site Supervisor will ensure that any defect notified by the plant operator during work on the site is reported immediately for repair and that where defects could affect safety on site, the item of plant is not used until the repairs are carried out.

The Site Supervision will not ask or permit the plant Operator to carry out work with the machine for which it was not intended unless specific advice has been obtained from the manufacturers of the machine on the proposed use.



### **3.4.2 TRANSPORT ON SITE**

#### **HAZARDS**

Hazard with use of transport on site arises out of:

- Incorrect use.
- Speeding.
- Poor maintenance (i.e. lack of checking water, oil, fuel, lights, tyres and brakes daily)
- Reversing unsupervised.
- Carrying of passengers where no proper seat provided.
- Undue care when refuelling.
- Over-loading or insecure loads.
- Incorrect or improper towing.

#### **CONTROL MEASURES**

All work will be tendered for or negotiated in accordance with the above standards.

The Contracts Manager will arrange for suitable transport to be provided taking into account the work to be carried out and the above standards.

Where necessary, discussions will take place between the Contracts Manager and the Local Authority, Gardai, etc. on road crossings, traffic management, etc.

Temporary access roads, fuel storage, maintenance facilities, etc. for transport on site will be planned.

A planned maintenance schedule will be prepared by the Plant/Transport Manager for all transport vehicles on site.

All banksmen, supervisory staff and operatives required to enter certain areas as designated by management will be provided with high visibility waistcoats or belts.

Transport drivers must not consume any intoxicating liquids or drugs before/during working day or shift.

#### **SUPERVISION**

The Site Supervisor will ensure that all site transport when delivered to site is in good order and fitted with all necessary safety devices, notices and guards. Any defect must be reported to Plant/Transport Manager or hire company and the machine must not be used until the defect is rectified.

The Site Supervisor will ensure that only authorised licensed drivers are permitted to operate any site transport. The Site Supervisor will also ensure that passengers are not carried on vehicles not designed for same. Where any doubt of competency of any operator exists, the Site Supervisor will report to the Plant / Transport Manager or hire company immediately.

No young person (under 18 years old) is permitted to operate any transport or act as banksman unless being trained under direct supervision.

Any necessary preparatory work required to ensure transport is used safely on site, e.g. access roads, traffic control measures, etc. will be carried out in accordance with planned requirements.

The Site Supervisor must ensure that any defect notified to him by the transport driver during operations on site is reported immediately for repair and that where the defect could affect safety on site, the item of transport must not be used until repairs are carried out.

### ***3.4.3 ELECTRICITY and ELECTRICAL EQUIPMENT***

#### **PERMANENT INSTALLATION AND DISTRIBUTION:**

##### **HAZARDS**

- Electric Shock
- Burns
- Tripping and falling over cables.

##### **CONTROL MEASURES**

Wiring installations on the premises shall be checked by a competent qualified electrician. Where possible the original installer should make the inspection and a certificate should be provided indicating that the installation complies with the Electro-Technical Council of Ireland "National rules for electrical installation". Where this is not feasible the person making the inspection should provide a report on the condition of the installation with particular reference to fire safety and outlining the tests done and the extent to which visual inspection was relied upon. Dangerous or defective material should be replaced or remedied in accordance with the E.T.C.I.'s rules. It is important that all extensions, alterations and repairs to electrical circuits are carried out in a proper manner in accordance with E.T.C.I.'s rules.

Any person carrying out any work on the electrical installation or any accessories or equipment connected thereto should normally isolate the equipment first by removing the main fuse or locking off the isolator. Live working will not be expected although if there is a chance of inadvertent contact with live parts, then special precautions will be taken by authorised electricians, e.g. the use of insulated test prods, insulating rubber mats and other back-up precautions. In such circumstances a second person must be in attendance to render emergency assistance if required.

If in doubt, the circuit must be tested using safe equipment to prove that it is dead

##### **CONTROL MEASURES (ON SITE)**

1. All cable connections must be properly made. Under no circumstances will insulation tape alone be used to protect any repair or join in extension cables. Work on equipment will only be done by an authorised person.
2. Only 110 v equipment (or less) will be used on site.
3. The correct extension cables will be used, to cope with wet and rough conditions. Extension cables will be minimised by the provision of adequate numbers of socket outlets. Extension cables, when used, will be routes so as not to cause tripping of similar hazards.
4. Whenever possible, site electrical supplies will be protected by residual current and other such protection devices.
5. All portable tools, cables etc should be identified and regularly inspected and maintained by a competent electrician. Check equipment before use for any sign of damage and report defects immediately.
6. Portable generators should be regularly inspected and tested. If fitted with an earth rod, then the connections must be maintained in good condition.
7. If anything goes wrong, switch the equipment off and disconnect from the power supply.

8. Do not lift or pull equipment by the cable, the connections may become broken and create a hazard.
9. Cables will be routed so as to be protected from damage.
10. On festoon lighting, all bulb sockets are live. Open sockets must be protected where a bulb is not fitted. As well as the fragments of glass of broken bulbs being a hazard, it must be remembered that the protruding filament wires are still live.

See also:-

- Plant on Site
- Overhead Electricity Cables
- Underground Services
- Protective Clothing and Equipment
- Welding
- Entry into Confined Spaces
- Site Tidiness

## **SUPERVISION**

The Site Supervisor will ensure that the temporary electrical supply is installed and tested as planned.

The Site Supervisor will ensure that all Contractor's equipment is in good condition and in accordance with the relevant Irish Standards before it is permitted to be used on site.

Immediate action will be taken against any person or Contractor abusing or incorrectly using electrical equipment on site.

The Site Supervisor will ensure that all power cables are installed clear of accessways and preferably above head height.

Festoon lighting equipment should be secured above head height. Where festoon lighting equipment is installed, it must not be of the screw on pin contact type. Only properly constructed sets with moulded on fittings will be used.

The Site Supervisor will ensure that any portable generator or other electrical equipment fitted with an earth rod has the earth rod and connection maintained in good condition.

Only authorised persons are permitted to repair or alter electrical equipment. Any defects noted in electrical equipment must be reported to the Supervisor so that immediate steps can be taken to have defects remedied by site electrician or hire company.

### **3.4.4 COMPRESSED AIR POWER TOOLS**

#### **HAZARDS**

The main hazards associated with compressed air and its' use are:

- Grit, swarf, etc. injury to eyes from use of tools or from blowing away dust.
- Vibration White Finger (Raynaud's Syndrome) particularly in cold weather or where considerable use is made of hand tools.
- Damage to internal organs or upper limbs due to incorrect posture when using breakers.
- Compressed air entering the body or blood stream via orifices or through the skin.
- Noise. (Note: leaving engine covers open results in noise control measures being made ineffective and can cause overheating of the engine).
- Damage to feet if breaker point slips (Usually caused by lack of sharpening).
- Uncoupled hose swinging out of control.
- Machine starting unintentionally while changing disc, point etc. due to air supply not being isolated at compressor.
- Manual handling accidents while moving compressor particularly if stand or jockey wheel damaged.
- Injuries while starting compressor due to lack of maintenance or to engine hood or cover stay failure.
- Towing by mechanical means (J.C.B.).

#### **CONTROL MEASURES**

When moving compressors on site, care must be taken to ensure that the jockey wheel or towing arm stand is not damaged.

When changing tools connected to compressed air lines not fitted with automatic cut-off valves, air must be turned off at source (lines must not just be folded and held or tied).

The Site Manager will ensure that any compressor and compressed air tools which are purchased or hired for use on site or in the workplace are in accordance with the required standards and are selected in accordance with the policy on noise.

A schedule of examination must be prepared for all the compressors, fittings and plant which uses air under pressure.

Copies of the necessary thorough examination certificates and schedule must be maintained. Documentation relating to hired plant should be requested from the hire company at the time of hire.

#### **Pneumatic Tools**

1. Operating triggers or portable pneumatic tools should be
  - (a) so placed as to minimise the risk of accidental starting of the machine;
  - (b) so arranged as to close the air inlet valve automatically when the pressure of the operator's hand is removed.
2. Hose and hose connections for compressed air supply to portable pneumatic tools should be:
  - (a) designed for the pressure and service for which they are intended.
  - (b) fastened securely to the pipe outlet and equipped with a safety chain.
3. Pneumatic shock tools should be equipped with safety clips or retainers to prevent dies and tools from being accidentally expelled from the barrel.

4. Tools should not be shot out of pneumatic hammers but removed by hand after use.
5. Pneumatic tools should be disconnected from the source of supply and the pressure in hose lines released before any adjustments or repairs are made.
6. Before disconnecting hose lines the air supply should be shut off.
7. Compressed air should never be used for cleaning clothing or parts of the body.
8. When cutting rivets with pneumatic cutters
  - (a) the tools should be provided with a cage guard or other suitable device to catch the rivet heads.
  - (b) workers should wear suitable head and eye protection.

## **SUPERVISION**

The Supervisor or Foreman will check that any compressor or compressed air tools provided for use are fitted with all necessary guards and safety devices (jockey wheel, brake, engine cover stays etc.). Noise control measures must be in place and instructions given to Operatives in the correct use of the equipment to reduce noise, injuries, damage, etc.

The Supervisor or Foreman will ensure that all necessary safety equipment, e.g. eye protection, hearing protection, gloves, is available and provided for use as required.

The Supervisor or Foreman will check that the necessary maintenance, lubrication, draining of receivers, etc is being carried out and that any defect in the compressor, towing arm stand, side panels, gauges, hoses, connections or tool is reported immediately to the appropriate Engineer or hire company.

Compressed air will not be used to blow down clothing etc. and disciplinary action will be taken against any Operative seen directing a live compressed air hose at any other person.

### **3.4.5 WOODWORKING MACHINES ON SITE**

#### **HAZARDS**

The main hazards associated with woodworking machines on site are:

- Contact with cutters due to inadequate or missing guards or push sticks not provided.
- Work piece being ejected due to blunt cutters.
- Unsafe working methods, safety devices inoperative.
- Falling onto machine due to slippery or uneven floor, debris, etc.
- Loose clothing becoming entangled in moving parts.
- Fires due to build-up of chips, sawdust, etc.
- Health hazards due to dusts, resins from certain woods or fumes from adhesives.
- Insufficient lighting.
- Noise.
- Other persons passing near woodworking machinery in use.

#### **CONTROL MEASURES**

All work will be planned for taking into account the required standards.

The Engineer will ensure that all machines provided or purchased for use on site comply fully with the above standards.

The Engineer will ensure that the following arrangements are planned:

Barriers and covering for machines are provided to prevent unauthorised access to machine and weather protection for operator.

Suitable level base providing good footing is available in working area of machine.

If appropriate, extraction facilities are provided.

Training is provided for operators.

#### **SUPERVISION**

The Site Supervisor will ensure that all machines provided are installed in accordance with the planned arrangements, that all safety devices, guards, etc. are available and fitted and that protective clothing or equipment, e.g. car defenders, eye protection, respirators, etc., is provided as required.

The Site Supervisor will not permit any unauthorised person or young persons under 18 years of age to operate any woodworking machine.

The Site Supervisor will ensure that the working area around any woodworking machine is kept clean and tidy and with sufficient space for working maintained.

The Site Supervisor will ensure that all cutters are sharpened as required and check that guards, push sticks, are correctly adjusted or used.

Any defects in machines, floors, barriers, lighting arrangements, etc. noted or reported must be attended to immediately and work stopped if the defect could affect safety.

The Site Supervisor will not require or permit any operative to use any machine for work for which it is not designed or which is prohibited by Regulations unless special guarding or safety equipment is fitted and used in accordance with the standards above, e.g. use of circular saw to carry out grooving.

### **3.4.6 CARTRIDGE TOOLS**

#### **HAZARDS**

- Flying Particles (Pieces of Metal).
- Tools left unattended.

#### **CONTROL MEASURES**

Only cartridge tools of low velocity indirect type will be used on the sites. Contractors will be informed of this policy by the Engineer.

The Site Manager will arrange for all Operatives who will be required to use cartridge tools on site to be trained by the cartridge tool manufacturer's representatives and certificates obtained.

Suitable storage facilities will be provided where cartridges are stored on site.

#### **SUPERVISION**

The Site Supervisor will ensure that only persons who have been trained are permitted or required to use cartridge tools on site.

The Site Supervisor will ensure that, where necessary, all cartridges are stored on site in the storage facilities provided.

The Site Supervisor will ensure that all cartridge tools brought on site by sub-contractors are of the low velocity indirect type.

The Site Supervisor will ensure that sufficient and suitable eye protection is available and issued when required.

The Site Supervisor will ensure where there is likely to be flammable vapours or gases or there is a risk of dust explosion.

### **3.4.7 ABRASIVE WHEELS**

#### **HAZARDS**

The main hazards associated with abrasive wheels are:

- Bursting of the wheel or disc.
- Injuries from flying particles.
- Cuts to hands, legs, etc.
- Dusts from certain types of materials.
- Loose clothing tangled in disc.
- Electric shock.
- Noise.
- Fire and explosion.

#### **CONTROL MEASURES**

The Site Manager will ensure that any abrasive wheel machine hired or owned by the Company will be provided and maintained in accordance with the Regulations.

The Site Manager will ensure that sufficient Operatives have been trained in accordance with the Abrasive Wheels Regulations in the mounting of abrasive wheels and discs on the type of machine to be used and that the names of the persons appointed are noted.

#### **SUPERVISION**

The Supervisor will ensure that any Operative required to change discs or wheels on abrasive wheel tools has been trained and appointed in accordance with the Regulations.

The Supervisor will ensure that suitable storage facilities are available for abrasive wheels and that sufficient quantities of suitable eye protection and other protective equipment is available and issued when required. Any person required to use an abrasive wheel machine or tool will be given instructions in the precautions required by a person trained under the Abrasive Wheels Regulations.

Supervisory staff will ensure that any abrasive wheel machine or tools being used with any defect which could give rise to injury is taken out of use immediately.



### **3.4.8 WELDING**

#### **HAZARDS**

The main hazards associated with this work are:-

- Fire
- Electric Shock
- Eye Injury
- Burns
- Fumes
- Asphyxiation
- Explosion
- Manual Handling

#### **CONTROL MEASURES**

All welding work will be planned taking into account the relevant standards.

Ensure that all necessary protective clothing, ventilation equipment, respirators or breathing apparatus, fire resistant sheets, extinguishers, screens and so on required to comply with the relevant standards are planned and arrangements made for delivery to site before welding or cutting work starts.

Establish whether any Hot Permit to Work system is required on the site and will ensure that Supervisor staff are made aware of procedure for issuing Hot Permit as required.

Welding/hot work will be prohibited in some areas e.g. Marshalling Areas, storage areas of LPG, flammables, oil, etc. Tests for flammable gases will be carried out in any sump or pit before any hot work is carried out.

Only trained and experienced operatives are permitted to carry out work with welding/cutting equipment.

Should it prove to be required then training will be given to staff when necessary.

Only trained and authorised operatives will use welding/burning equipment.

Flashback arrestors will be fitted to all oxygen and fuel gas regulators.

Assessments of risks to health from welding, cutting or burning operations must be available before work commences. No painted metal will be cut or welded until advice is obtained from the Safety Supervisor on precautions required.

No welding, cutting or burning will take place in confined spaces until advice is obtained from the Safety Supervisor on precautions required.

Electric welding equipment will be used in accordance with the relevant standards especially with regard to isolation, earthing and wiring arrangements.

Appropriate protective clothing e.g. gloves, boots, overalls, aprons, eye protection, etc. will be worn at all times during operations. Operatives should remove personal jewellery before work commences.

Electrode holders should be disconnected before replacing the electrode.

Ensure adequate fire precautions are available before work commences and take care that any location adjacent especially below the work area is monitored for possible fires. Check the work area following completion of work for any possible smouldering debris.

Check and maintain the equipment regularly.

Ensure adequate protection is provided to protect others from the work by the use of screens etc.

Special precautions will be required if any hot work has to be carried out on any tanks or containers.

Ensure all equipment is in good condition and that all connections are correctly made to ensure that no gas leads into the work area.

Store equipment upright, and secure during use or storage.

Ensure good ventilation during work operations.

## 3.5 EXCAVATIONS

### 3.5.1 EXCAVATIONS

#### HAZARDS

The main hazards associated with excavations are:

- Collapse of the sides.
- Persons falling into excavations.
- Striking underground services (see separate section).
- Persons in excavations being struck by falling materials.
- Building or structures collapsing due to excavations.
- Flooding.
- Asphyxiation or poisoning due to ground conditions or times from plant.
- Plant running into excavations.

#### CONTROL MEASURES

Stability of plant should be considered when working on peat, soft ground conditions to ensure that plant does not tip over or sink etc. There may be a requirement for the provision of such safeguards as excavator mats or ground stabilisation techniques.

Where necessary, excavation supports, underpinning or shoring will be designed by specialists.

All personnel required to enter excavations must wear a safety helmet.

The safety of the public, particularly children, blind or disabled persons must be considered when excavations are left open outside working hours.

Where health hazards may be encountered, e.g. landfill sites, industrial sites, sewers, methane gas, carbon dioxide from limestone etc. advice will be obtained on the precautions required e.g. air sampling, monitoring etc.

At the planning stage the engineer, the plant, equipment, materials and procedures necessary to comply with the above standards will be allowed for.

Details of the ground conditions to be encountered in excavation work or the buildings or structures affected will be obtained where possible by the Engineer to enable work to be planned safely. This information will be discussed with the Site Supervisor before excavation commences. Special consideration should be given to the stability of plant when working on peat or other unstable ground to ensure that the loading can be supported adequately.

#### SUPERVISION

Supervisors will not permit excavation work to begin on site until all plant, materials and equipment necessary to carry out the excavation work safely is available on site.

No person is permitted to enter any unsupported excavation more than 1.25 metres deep unless the sides are properly supported or battered back to a safe angle for the ground conditions which apply. Shallower trenches may require support in very poor conditions.

Where possible, the excavation support should be installed from ground level. Otherwise precautions must be provided for safety of Operatives installing support.

The Supervisor must inspect daily at the commencement of each shift all excavations required to be supported, as noted above, and the working end of any trench more than 2 metres deep.

The Supervisor must also carry out a thorough examination of any excavation required to be supported on a daily basis, and a thorough report must be carried out every 7 days.

A thorough examination must also be carried out after blasting in or near the excavation or if there has been a fall of earth or rock or if any part of the support has been substantially damaged.

These thorough examinations should be recorded in the site register Form AF 3.

Access and plant must be routed away from the edge of excavations.

Stop blocks or other precautions must be provided to prevent vehicles tipping into excavations from overrunning the edge.

Materials must not be stacked or placed near the edges of excavations.

Secure barriers must be provided around any excavation or around excavations of any depth in public areas.

Ladders, securely fixed, must be provided for access into excavations and to provide a means of egress in the event of flooding.

## **STANDARDS REQUIRED**

H.S.A. "A Guide to Safety in Excavations"

The Construction Industry Research and Information Association (CIPIA) publication, "Trenching Practice", gives practical information on methods of selection, installation and removal of trench supports.

### **3.5.2 UNDERGROUND SERVICES**

#### **HAZARDS**

- Contact with underground power cables
- Collapse of sides
- Flooding
- Asphyxiation or poisoning due to ground conditions or fumes from plant.

#### **CONTROL MEASURES**

All work will be planned for in accordance with the required standards.

The Site Manager will obtain full details of all underground services from the various service authorities, i.e.

Electricity Supply Board  
Bord Gais  
Local Authority  
Telecom Eireann  
Adjacent private owners and any other local special circumstances.

Where conditions are such that there are a large number of existing services, e.g. in a town centre or large industrial complex, then a Permit to Work system for excavation work will be prepared.

#### **SUPERVISION**

Before any excavation work commences, the Site Supervisor will ensure that all Information on existing underground services has been obtained and that either all services are physically located and marked by means of location equipment and/or carefully hand dug trial holes or that trial holes are carefully excavated along the line of the proposed trench or area of excavation.

Full consultation must be carried out at all stages with representatives of the various service authorities to agree precautions required.

All Supervisors, machine Operators and Banks men will be instructed in the procedures to be followed. Any Contractors involved in excavation work will be issued with full information obtained from service authorities and will also be involved in any consultation procedures. All persons on site will be instructed in the operation of a Permit to Work system if applicable.

Any service installed as temporary supplies or as part of the permanent works will be accurately plotted on a site plan by the Engineer/Site Agent and will be physically marked along its route by means of timber stakes and notices.

#### **STANDARDS REQUIRED**

The Construction Regulations 2006 requires precautions to be taken to prevent danger from Electricity Cables.

H.S.A Code of practice for Avoiding danger from underground services.

Other services if damaged by excavation work could also be a hazard, e.g. water flooding trench, gas causing asphyxia. In this connection, Part IX the above Regulations also may apply. Explosion risks caused by gas leaks, health risks from raw sewage must be taken into account as should the cost of repair involved in all cases.

### ***3.5.3 SERVICE LAYING***

#### **SAFE SYSTEM OF WORK**

Most of the hazards relating to this work are detailed in the sections on roadwork, excavations, underground services however, in addition, the safety of members of the public can be affected if work is not carried out and tested properly.

#### **EMERGENCY PROCEDURES**

Where emergency work has to be carried out at short notice Supervisors must remain on site during all excavation work or other work where safety of employees or others could be affected by the nature of the work carried out.

All operatives must be made fully aware of the procedures to be followed in the event of accidental damage to services.

#### **PLANNING PROCEDURES**

The Engineer must ensure that all the statutory requirements and the appropriate Codes of Practice have been included in the planning of work, supply of equipment, training of supervisors and operatives, supervision of work.

#### **SUPERVISION**

Supervisors will ensure that work under their control is carried out in accordance with the standards noted above, and that all necessary tests, purging, inspections have been carried out and recorded as necessary.

#### **STANDARDS REQUIRED**

The work of laying, repairing, replacing, maintaining services must be carried out in accordance with the statutory requirements as applicable:

Work will be planned, organised and carried out in accordance with these requirements.

## 3.6 LIFTING OPERATIONS

### 3.6.1 LIFTING OPERATIONS

#### GENERAL

#### HAZARDS

The main hazards associated with lifting operations are:

- Unsuitable or inadequate base for crane.
- Overloading of lifting appliance.
- Overloading or incorrect use of lifting gear.
- Incorrect positioning of lifting appliance.
- Insecure attachment of load.
- Contact with overhead electricity lines (see separate section).
- Improper methods of use of equipment.
- Failure of equipment due to lack of maintenance.
- Incorrect signals.

#### CONTROL MEASURES

All personnel working with or near lifting appliances must wear safety helmets.

All lifting appliances must be secured and left in safe condition at the end of each working period taking into account the safety of children in particular.

Areas where lifting operations are to be carried out must be cleared and loads must not be carried over personnel.

If it is necessary to inspect the bottom faces of heavy loads, purpose made, tested stands must be used.

Loose items must be secured or fully covered when being handled by a lifting appliance.

If any lift, hoist, crane or excavator collapses or overturns on site or any load bearing part falls, the procedures detailed for dangerous occurrences in this Statement must be carried out.

All lifting operations will be planned for taking into account the standards required.

The Site Manager will ensure that lifting operations are planned taking into account the siting of lifting appliances, provision of suitable lifting gear, the weights and positions of load to be handled, etc. Suppliers will be asked to provide information on weights, lifting points, safe slinging procedures etc. of material or articles supplied.

Any height, weight, overhead service or other restrictions on or adjacent to the site will be considered before work starts, especially taking into account the safety of the public.

Servicing and maintenance of all lifting appliances must be planned before being taken into use on site.

Training will be provided for Operators of lifting appliances and Banksmen, Slingers, Riggers. Where appropriate, only persons who possess a certificate will be permitted to operate a lifting appliance.

#### SUPERVISION

The Site Supervisor will ensure that any lifting appliance and lifting gear provided or delivered for use on site has been tested, thoroughly examined and inspected in accordance with the above standards and that copies of certificates, register entries etc. are available on site. Any other equipment will not be used to carry out lifting operations.

The Site Supervisor will ensure that areas where mobile cranes are to be set up to carry out lifting operations are levelled and consolidated. Where mobile cranes must be used in areas where there are underground ducts, drains, basements or where there is doubt of the bearing capacity of the ground, an Engineer must be asked to confirm that the area is suitable or that additional precautions must be taken.

Rubbish skips must not be lifted by a lifting appliance unless the skip is designed and marked as being suitable for lifting purposes.

The Site Supervisor will check that lifting appliances such as gin wheels, pulley blocks, etc. are correctly erected and used.

Only trained authorised Operatives will be permitted to operate lifting appliances, to sling loads or give signals. The authorised persons must be over the age of 18 and be competent to carry out the duties. Where there is any doubt of the competency of the authorised Operatives, the Site Manager must be informed immediately.

Any defect noted in any lifting appliance machine, gear or tackle must be reported immediately and the equipment taken out of use if the defect could affect its safe use.

Where adverse weather conditions could affect the safety of lifting operations, the Site Supervisor will stop operations until conditions improve.

The Site Supervisor will ensure that all lifting appliances are inspected weekly and a record of the inspection made.



### 3.6.2 CRANES

#### HAZARDS

The main hazards associated with cranes are:

- Overloading due to failure to correctly estimate loads or due to incorrect use of crane.
- Inadequate maintenance of equipment or use of defective equipment.
- Unsafe methods of erection, alteration or dismantling of crane.
- Unsafe slinging or incorrect slings used.
- Insecure loads.
- Handling of loads in high winds.
- Contact with electricity cables (see separate section).
- Incorrect signals.
- Unsuitable base for crane.

#### CONTROL MEASURES

All personnel working with or near cranes must wear safety helmets.

All cranes must be secured and left in a safe condition at the end of each working period taking into account the safety of children. Loads must not be left suspended when the crane is unattended.

Loads must not be carried over personnel or public areas unless precautions are taken to remove risk. Loose materials must be fully secured or covered when being handled.

Safety equipment must be provided to persons carrying out inspections or maintenance of cranes where a fall of 2 metres or more is possible.

The Site Manager will ensure that when the use of a crane is planned, the following matters are considered:

Size, weight and position of maximum loads to be handled.

Safe working loads of crane having regard for radii to be used.

Overhead electricity cables or other services

Limitations of height or radii on site.

Permits or permission to oversail adjacent properties.

Ground bearing capacities, position of basements, underground services, etc.

Methods of work to avoid hazards during erection.

Lifting gear to be used.

Safe installation of fuel storage facilities.

Safety of other Contractors and public.

Suppliers will be asked to provide information on weights, lifting points, safe slinging procedures, etc. for materials or articles supplied.

Servicing, maintenance, testing, thorough examinations, etc. must be arranged as required before the crane is used on site.

Training will be provided for Crane Drivers, Banksmen, Slingers, Supervisors and Crane Erectors.

## **SUPERVISION**

The Site Supervisor will ensure that the crane provided for use has a current test certificate, has been thoroughly examined within the preceding 14 months, has been inspected within the previous 7 days and is fitted with all necessary indicators and safety devices.

Where applicable, the Site Supervisor will ensure that the anchorage or ballasting and the automatic safe working load indicator of the crane has been examined and tested before the first use of the crane on site and shall ensure that a further examination is carried out after any adverse weather conditions likely to have affected the stability of the crane.

The Site Supervisor will ensure that all procedures to ensure safety during the erection or dismantling of a crane are carried out as planned.

Only authorised and, where appropriate, persons suitably certified will be permitted to operate cranes or to give signals and sling loads. The authorised persons must be over the age of 18 and competent to carry out duties.

Where any defect is noted or reported in any crane or item of lifting gear and the defect could affect the safe use of the equipment, it must be taken out of use until the defect is rectified.

The Site Supervisor will ensure that the crane is used on site in accordance with planned procedures and taking into account the recommendations and requirements of the standards noted above.

The Site Supervisor will ensure that the weekly inspections of the crane and the automatic safe working load indicator are recorded in the register on site.

### **3.6.3 LIFTING GEAR**

#### **HAZARDS**

The main hazards associated with lifting gear are:

- Overloading.
- Incorrect use, i.e. too wide an angle between legs of sling, use of eye bolt at an angle, etc.
- Use of defective equipment.
- Damage to sling, i.e. lack of packing to load.
- Incorrect slinging method.

#### **CONTROL MEASURES**

All personnel working with or near lifting appliances must wear safety helmets.

"Dynamo" type eye bolts must not be used.

Repairs to lifting gear must not be carried out on site. A test certificate must be obtained for any repaired item of lifting gear.

Slings and other lifting gear must not be used for operations for which they were not intended and must not be altered or adapted by unsafe methods, i.e. knots, bolts through links, etc.

Sufficient materials for packing between sling and load must be provided.

The Site Manager will ensure the provision of lifting gear is planned taking into account the size, weight and type of loads to be lifted and the conditions in which the lifting gear is to be used.

Training will be provided for Slingers and Supervisors.

## **3.7 HEALTH HAZARDS**

### **3.7.1 HEALTH HAZARDS**

#### **(HAZARDOUS SUBSTANCES)**

#### **HAZARDS**

Health hazards from substances can be divided into the following categories:

- External contact - corrosive, skin absorption, dermatitis, e.g. cement, acids, epoxy resins, etc.
- Inhalation - gases, fumes, dusts, vapours.
- Ingestion - swallowing.

#### **CONTROL MEASURES**

A general (generic) written assessment will be prepared for substances, processes, and site health hazards normally used or encountered on Sites and this information will be supplied to holders of the Company Safety Statement in each Section.

To prepare the general written assessment the following steps are taken:

- (a) Obtain Health and Safety Data Sheets for all substances in use.
- (b) Identify all potentially hazardous substances.
- (c) Assess the degree of risk and decide on whether or not protective measures are needed and the nature of these measures.
- (d) Review the method of use.

The following general precautions apply to the handling, transporting and use of all substances. Special precautions relating to specific products are given in the specific written assessments.

Exposure to hazardous substances shall be controlled to as low a level as is reasonably practicable.

The selection of options to control exposure shall be in order of preference:

- Use of a totally enclosed system.
- Engineering controls.
- Local exhaust ventilation.
- Reducing the number of potentially exposed persons to a minimum.
- Reducing the periods of potential exposure.
- Prohibition of eating, smoking, drinking in areas where exposure is likely.
- Use of suitable protective equipment.

A monitoring programme shall be established to determine the extent of exposure of individuals in comparison with prescribed or approved occupational exposure limits.

All employees shall be provided with information, instruction and training in relation to the use of hazardous substances.

The Engineer will ensure that, before work starts on any job, information is obtained on any material, substance, or process to be used or likely to be encountered which could be a hazard to the health of Operatives, and which is not covered by the generic assessment or is covered but requires a more detailed assessment. He will ensure that a written site/job specific assessment is made of any risks involved in

handling, using the substance, that appropriate control measures are planned and that this information is provided to Site Supervisory staff with instructions on implementation as necessary.

If possible, arrangements should be made for an alternative, less hazardous material to be specified.

Any necessary equipment, enclosures, extraction equipment, hygiene facilities, monitoring, medical examinations, protective clothing etc. must be planned before work commences.

All Operatives engaged in any process involving the use or handling of any hazardous substance must be given full instructions and any necessary training in the health hazards and precautions, use of protective clothing, equipment, hygiene measures, etc. as required.

## **SUPERVISION**

The Site/Workplace Supervisor will ensure that the written assessment, control measures and other information is on site and that all procedures planned to handle or use any hazardous substance or process are carried out fully and that any, equipment, hygiene measures or protective clothing are provided and maintained as required.

Any necessary air sampling, medical examinations, testing, etc. will be carried out as required and records will be kept on site during the operations.

All measures necessary to protect other workers and the general public from any substance hazardous to health will be provided and maintained.

## **HAZARDOUS SUBSTANCES**

### **General Precautions**

Almost all chemical materials are potentially dangerous. Although they may find their way into day to day use, it is usually a very diluted or otherwise modified form. The following general rules should always apply:

- 1) Chemical products must never be allowed to come into eye contact. Contact with skin and mucous membrane must likewise be avoided. Wear protective equipment and clothing, supplied. Always observe good industrial hygiene practice.
- 2) Do not swallow materials or use in areas where food is being consumed. Smoking is also prohibited during application and curing,
- 3) Inhalation of chemical vapours or dust should be avoided. Adequate ventilation must be provided. Suitable respiratory protection will be provided if appropriate.
- 4) Facilities for the washing and cleansing of the skin must be made available with the necessary cleansers and barrier creams.
- 5) Store all products in ventilated areas away from extremes of temperatures and environment.
- 6) Clean all spillages instantly and dispose of waste and used containers properly.
- 7) Except for transport in closed packages, materials must be handled only by authorised personnel.
- 8) Ensure the correct equipment for handling the products is available.
- 9) If any person handling the materials shows the symptoms which may possibly have been caused by exposure to chemical products, they should be removed from the area and medical advice sought without delay.
- 10) Read the data sheet, container labels and detailed health and safety information before using any products.

### 3.7.2 NOISE

#### HAZARDS

Excessive sustained noise can be damaging to a persons hearing.

#### CONTROL MEASURES

The Engineer/Plant Manager will ensure that information on the noise level of any plant which he/she is intending to hire or purchase is obtained and taken into account before hiring or purchase takes place.

The Engineer/Workplace Manager will ensure that any static plant to be installed on site or in the workshop is planned to be in a position which takes account of the effects of noise on the workers or the public.

Where personnel will be required to work in situations where levels of noise are likely to be encountered, the Contracts Manager will ensure that full information is obtained before work commences on the levels and frequencies of noise.

The Engineer will arrange for the following depending on levels of noise and the action levels which apply to that level, i.e.,

First Action level 85 dB(A) daily personal exposure.  
Peak Action level 200 pascals peak sound pressure.  
Second Action level 87dB(A).

Above First Action level / Below Second Action level.

- (i) A noise assessment by a competent person in writing.
- (ii) Measures to reduce the risk suitable ear defenders available, on request, to employees.

Above Second Action level or Peak Action level.

- (i) A noise assessment as above.
- (ii) Measures to reduce the risk (Schedule 3 of the Gen. App. Regs, 2007)
- (iii) Suitable ear defenders must be provided.
- (iv) Ear Protection Zones must be demarcated and BS5378 signs displayed.

Equipment must be maintained.

Instruction and training will be provided to Supervisors and operatives required to work in premises or with plant which is likely to result in exposure to noise levels above the first action level.

#### SUPERVISION

The Site/Workplace Supervisor will ensure that all plant provided with fitted with silences, mufflers, doors, canopies, etc. and that all equipment and noise reducing doors are used.

Supplies of ear defenders or other hearing protection will be made available on the site or for any operations where it is not practicable to reduce the noise levels to a safe limit. These will be issued to operatives as required and must be worn at all times when operative is exposed to noise above the Second Action level or Peak Action level.

The Site/Workplace Supervisor will ensure that all noise control items fitted to plant or in premises are kept in good order and that any defects noted are reported to the Plant Manager or hire company immediately.

### 3.7.3 VIBRATION

#### Exposure Limits

##### *For hand-arm vibration-*

The daily exposure limit value standardised to an eight hour reference period shall be  $5\text{m/S}^2$ .

The daily exposure limit value standardised to an eight hour reference period shall be  $5\text{m/S}^2$ .

Exposure shall be assessed or measured on the basis set out in Part A of Schedule 6 (Gen App Regs. 2007).

##### *For whole body vibration-*

The daily exposure limit value standardised to an eight hour reference period shall be  $1.15\text{m/S}^2$ .

The daily exposure limit value standardised to an eight hour reference period shall be  $0.5\text{m/S}^2$ .

Exposure shall be assessed or measured on the basis set out in Part B of Schedule 6 (Gen App Regs. 2007).

The supervisor must carry out a risk assessment in relation to the works.

The risk assessment must taken into account the specific work practices, and work equipment.

Particular attention must be given to;

- A The level, type and duration of exposure.
- B The exposure limit values
- C The effects of the exposure to vibration on employees.
- D Any information provided by the manufacturer
- E The existence of replacement equipment designed to reduce exposure
- F Specific working conditions such as low temperatures

The supervisor of the works shall maintain records in relation to all health checks on the employee involved in the works.

## 3.8 SPECIAL RISKS

### 3.8.1 DEMOLITION/REFURBISHMENT

#### HAZARDS

The Contracts Manager and Supervisor will ensure that protective measures of the safety of the public or visitors on site shall be provided and maintained. These measures must take into account the prevention of accidents, especially to children.

All plant used on demolition sites will be suitable for demolition work and will be provided with any necessary safeguards to protect the operator.

When carrying out preliminary procedures, the following must receive special attention:

1. The location and disconnection of any services into the site. Confirmation of disconnection in writing must be requested from the appropriate service authority.
2. The existence of any hazardous substances, e.g. asbestos, lead painted steelwork, etc. on site must be determined from the documents provided and from a physical survey on site, carrying out any sampling required.

Where the building or structure to be demolished contains unusual or possibly hazardous design features, or is in a dangerous structural condition, e.g. prestressed or post tensioned concrete, fire damaged building, cantilevered balcony, etc. then advice must be obtained from the qualified consultant structural engineer.

#### CONTROL MEASURES

All work will be tendered for or negotiated in accordance with the above standards.

All preliminary procedures required by the Code of Practice and Guidance Notes GS29/1 will be carried out by the Contracts Manager in conjunction with a specialist contractor if used, who will draw up a Method Statement and a programme of work detailing the methods to be used, plant, safe systems of work etc. This Method Statement and programme will be issued to the Supervisor responsible for the work on site.

#### SUPERVISION

In accordance with the Construction Regulations, a competent person will be appointed in writing to supervise the work on site.

The Supervisor appointed will be responsible for ensuring that the work is carried out in accordance with these standards and will be responsible for carrying out any inspections of scaffolding, etc. which may apply on site.

The appointed Supervisor shall remain on site at all times when demolition works are being carried out.

The person appointed shall be experienced in the work and shall receive full training responsibilities by this Policy.



### **3.8.2 FALSEWORK**

#### **HAZARDS**

The main hazards associated with false work are:

- Failure to prepare design (particularly for minor work).
- Inadequate design, e.g. not taking into account lateral loadings, wind loadings, total weight of building or structure to be supported etc.
- Failure to agree procedures between all parties involved.
- Failure to construct false work as designed.
- Failure to prepare base.
- Poor workmanship e.g. props not plumb, bracing left out, wrong fittings used.
- No protection from plant or vehicles provided to prevent damage to false work.
- Safe working platforms and accesses not provided.
- Precautions to prevent falls of materials not provided.
- Use of defective materials.

#### **CONTROL MEASURES**

Where false work to support formwork or sections of buildings or structures during construction, repair, refurbishment or demolition will be required, the Engineer will ensure that the falsework is designed and planned in accordance with the procedures defined in B.S. 5975. This will apply to falsework of any size.

The planning must take into account the safety of all including the public.

#### **SUPERVISION**

The Site Supervisor will ensure that all necessary design drawings, sketches and calculations are available on site before work starts to enable the false work to be erected properly. The Site Supervisor will ensure that all materials used in falsework structures are in good order.

A safe system of work will be prepared by the Site Supervisor for the erection and dismantling of falsework providing safe accesses and working places for personnel involved.

Loadings will not be applied to falsework until checks have been carried out by the Supervisor or other person appointed to carry out these duties and it is recorded in writing that it is in order to proceed.

### **3.8.3 ENTRY INTO CONFINED SPACES**

#### **HAZARDS**

A Confined Space can be defined as any space which has limited means of access and egress, restricted natural ventilation and is not intended for continual occupancy by persons, e.g., storage tanks, pits, trenches, ducts, some areas or rooms within buildings (particularly areas below ground level), sewers, tunnels, boilers, etc.

Hazards associated with confined spaces fall into two categories:

1. Hazards associated with conditions which exist in the confined space before work takes place, e.g. lack of oxygen, toxic chemicals, explosive gases.
2. Hazards which can be introduced into the confined space by the work to be carried out, e.g. fumes from welding operation, unsuitable electrical equipment, etc.

The main hazards associated with confined spaces are:

- Asphyxiation due to oxygen depletion.
- Poisoning by toxic substance or times.
- Explosions due to gases, times, dust.
- Fire due to flammable liquids, oxygen enrichment, etc.
- Electrocutation from unsuitable equipment.
- Difficulties of rescuing injured personnel.
- Drowning.
- Fumes from plant or processes entering confined spaces.
- Diseases from animal wastes, infected materials or micro-organisms, e.g. fungal infections, tetanus, Weil's disease (from rat's urine), pigeon droppings.

#### **CONTROL MEASURES**

Before work commences, the Site Manager must establish if work in confined spaces is to be carried out and if so, must arrange for any necessary surveys, assessments, sampling, equipment, working, procedures, training, etc. to be provided taking into account the hazards likely to be encountered.

#### **SUPERVISION**

The Site Supervisor will ensure that all necessary equipment is available on site in accordance with the planned procedures before any person is required to enter a confined space.

The Site Supervisor will ensure that the planned procedures, including any Permit to Work systems, are carried out as planned and that only authorised persons are permitted to enter the confined space.

All safety equipment must be regularly checked and maintained. Any defects in equipment must be attended to immediately.

### **3.8.4 PERMIT TO WORK**

#### **SAFE SYSTEMS OF WORK**

Where particular hazards exist in any of the foregoing a permit to work procedure will be introduced.

The record book must be kept by the person responsible for issue of permits.

A consecutive permit number must be given to each permit issued.

The permit must be completed in duplicate with the carbon copy retained with the record book by the person responsible for the issue of permits.

The permit to work used by this Company must be completed as follows:

Permit number, site, date and time issued must be completed on each Permit.

1. **Limits of Permit**

This section of the permit must clearly define the area or room to be entered or work to be carried out under the permit.

Where work has to be carried out under a permit procedure set-up by this Company, e.g. entry into confined spaces, work on electrical equipment made dead, hot work permit, then the standard Company Permit to Work will be used as part of the procedure.

The date and time until which the permit is valid must be completed. Normally permits should be issued for one day only or less.

2. **Restrictions**

A permit may be issued for entry into a room or confined space but certain specific work in that area may require a further permit in which case this requirement must be noted in this section.

Similar restrictions may apply to entry into adjoining rooms or areas, use of power tools, welding operations, etc.

3. **Hazards**

Those hazards which do not apply to the area/work should be deleted and details noted on applicable hazards in the space on the permit, e.g.

"Fumigation of room carried out using formaldehyde",

"Machinery is controlled by micro-processor and may start without warning",

"11,000 volts underground supply into adjacent transformer", etc.

4. **Precautions**

Details of isolation of electrical supply, ventilation and gas testing of atmosphere, locking-off of machinery controls and any other pre-entry or pre-work measures carried out to ensure safety must be noted in this section. If information is given on additional sheet, this must be noted and the additional sheet attached to the permit.

5. **Conditions**

Any protective clothing required, on-going gas testing, radiation monitoring, emergency alarm and escape procedures and any other requirement while work is taking place must be noted in this section.

If information is given on additional sheet, this must be noted and the additional sheet attached to the permit.

6. **Issue of Permit**

When the permit is issued, the person issuing the permit, before signing the permit, will ensure that the precautions have been carried out and then discuss the limits, restrictions, precautions and conditions with the person to whom the permit is issued.

7. **Receipt of Permit**

The person receiving the permit, before signing it, will ensure that he understands fully the limits, restrictions and conditions of the permit and will then accept the responsibility for informing all the persons under his control.

Note: The permit will only be valid while the person to whom it was issued is still on the site. If that person must leave the site, then the permit must be cleared and cancelled and another person nominated to receive a fresh permit.

If the person to whom the permit is issued is not satisfied in any way with the precautions and conditions which apply at any time during operations, then all persons under his control must be withdrawn and the permit returned to the person who issued it with details of any difficulties, unsafe conditions, etc. encountered.

8. **Clearance**

When the permit time limit is reached, the work is complete, and the permit holder leaves the site, then this section must be signed and dated before returning the permit.

If the work has been fully completed and all tools and equipment have been removed, then the section which refers to this should be crossed out.

The permit can only be cleared by the person to whom it was issued.

9. **Cancellation**

The permit cannot be cancelled unless both copies are with the person who issued the permit and the person to whom the permit was issued has cleared the permit by completing section 8.

Normally, only the person who issues a permit should cancel it but in some cases it may be necessary to authorise other persons to cancel permits providing that the permit record book is maintained up-to-date.

When a permit is cancelled, both sides of each copy must be marked with a clear bold diagonal line from corner to corner and both copies must be filed in a cancelled permit file.

## **CONTROL MEASURES**

A Permit to Work procedure may be a requirement of controller of premises, a contractor or may be set up by this Council.

If the permit procedure does not cover the requirements of this Policy, improvements must be requested.

Where Permit to Work procedures are set up by this Company, the Engineer will ensure that the procedures are clearly defined and the personnel who will operate the system have been fully instructed.

The following check list will be used by Contract Management to ensure that any permit procedure fully meets this Council's Policy:

1. Does the permit procedure satisfy the legal requirements applying to the site/installation?
2. Is the permit procedure recognised throughout the site/installation as being essential for certain types of work?
3. Are types of work, types of jobs or areas where permits must be obtained clearly defined and known to all concerned?
4. Does the permit procedure extend to all other contractors, client personnel, etc?
5. Is it clearly laid down who may issue permits and how permits may be obtained?
6. Are personnel who issue permits properly authorised and trained to undertake the duties placed on them and have sufficient time to carry out the duties properly?

7. Is the permit procedure flexible enough to allow it to be applied to other potentially hazardous work other than that for which it was originally set up?
8. Is there a clear system for requiring a stoppage of work under a permit procedure if any new hazards have arisen or old hazards recurred?
9. Does the permit procedure contain clear rules about how the job should be controlled or abandoned in the event of a major or general site emergency?
10. Is the issue of a permit by a person to himself constrained by the procedure in force?
11. Do permits specify clearly the job to be done?
12. Do permits specify clearly to whom they are issued?
13. Does the recipient have to sign the permit to show that he has both read the permit and understood the conditions laid down in it?
14. Does the procedure provide both for the recipient to retain the permit and for a record of live permits to be maintained at the point of issue?
15. Do permits specify clearly a time limit for expiry or renewal?
16. Do permits specify clearly the plant or geographical area to which work must be limited?
17. Does the permit procedure include a hand over mechanism for work which extends beyond a shift or other work period?
18. Is a hand back signature required when the job is complete?
19. Is there a system of spot checks to ensure that permits are being followed?
20. Is there a procedure for reporting any incidents that have arisen during work carried out under a permit and for reviewing the permit procedure as necessary?

## **SUPERVISION**

Supervisors on site must ensure that all persons under their control are aware of a permit procedure and the areas/work for which a permit is required.

Notices, signs, etc. prohibiting access to areas, plant, specific work without permits must be displayed and Supervisors must ensure that they are maintained in position and replaced immediately if lost, damaged or become unreadable.

Disciplinary action will be taken against any person disregarding the permit procedure.

Supervisors must carry out regular checks to ensure that the permit procedure is being followed and that current permits are in the possession of persons in areas/carrying out work covered by the permit system.

### **3.8.5 ROAD SURFACING**

#### **HAZARDS**

The main hazards associated with road surfacing are:

- Traffic
- Overhead and underground services
- Flammable liquids
- Liquefied petroleum gas
- Movement of plant
- Reversing transport
- Slippery surfaces on plant
- Splashes of hot material
- Dermatitis and skin problems
- Unguarded moving parts of plant
- Spraying of hot flammable liquids
- Fumes for hot binder, asphalt etc
- Epoxy resin on skin or in eyes
- Use of breakers, cutters etc - dust and eye injuries
- Noise

#### **PLANNING PROCEDURES**

The Engineer will ensure that the following arrangements are made before work commences on site:

Traffic Management (see separate section)

Overhead and underground service protection (see separate section)

Plant and vehicle to be provided are fitted with all necessary safety devices, guards, lighting, hazard warning flashing beacons.

All plant and transport to be in good order, well maintained and provision for servicing, maintenance, etc., made while the equipment is in use on site.

Written assessments of risks to health associated with materials, process used.

Adequate welfare facilities with hand cleansing materials, barrier creams, storage for protective clothing, etc.

Fire fighting equipment suitable for fire hazards involved with the materials used.

Protective clothing and equipment to prevent excessive skin contact with materials, eye protection, respirators, ear defenders, high visibility clothing etc.

Floodlighting where work is to be carried out after dark.

First Aid facilities with a supply of cold water for treatment of burns.

Fuel storage and material storage.

Training for Supervisors, plant operators, first aiders.

Information and instructions to all personnel on health and safety hazards associated with plant, equipment and materials used.

## **SUPERVISION**

Site Supervisors will ensure that all plant, equipment and facilities are provided in accordance with the planned arrangements.

Any defects in plant or equipment must be referred back to Plant Manager or Hire Company immediately.

Operatives must not be carried as passengers on plant or vehicles not constructed for passenger use.

All materials must be used in accordance with manufacturer's instructions, e.g. heating temperatures and pressures.

Welfare and first aid facilities must be fully maintained and kept clean and tidy.

Smoking must not be permitted near spraying operations.

Protective clothing must be cleaned regularly.

Build up of materials must not be permitted on plant, tools, equipment etc.

All plant and vehicles must be locked, immobilised, and left in a safe position at the end of each day.

Members of the public, particularly children must be prevented from entering working areas.

## 3.9 PERSONAL PROTECTION

### 3.9.1 PROTECTIVE CLOTHING AND EQUIPMENT

#### SAFE SYSTEMS OF WORK

All Operatives are required to wear suitable footwear whilst at work on sites or in workplaces.

All management, supervisory staff, visitors, Contractors, Sub-Contractors and employees shall wear safety helmets whilst on sites, other than in areas specifically designated in writing by the Company as "no risk areas", being areas where the risk of head injuries is negligible. Normal disciplinary proceedings will be used against employees not complying with this requirement.

All Plant Operators employed by the Company will be issued with appropriate hearing protection and instructed in its maintenance and use.

All persons issued with protective clothing or equipment must immediately report to their Supervisor any loss or defect in the equipment.

The employer when providing PPE shall take into account the appropriate matters specified in Schedule 2 of the General Application Regulation 2007.

#### CONTROL MEASURES

Before work starts, the Manager/Supervisor will establish what protective clothing and equipment will be necessary and will ensure that any special protective clothing or equipment required and any signs relating to the wearing of helmets, eye protection and ear defenders are ordered and available for use on site.

##### Respiratory Protective Equipment

Appropriate breathing apparatus shall be made available for all persons required to work in dangerous atmospheres. Personnel shall receive adequate training in the use and maintenance of this equipment.

##### Atmosphere Monitoring Equipment

This equipment shall be supplied and used where there is a high risk of exposure to hazardous substances. All equipment shall be maintained in good order and records kept of all calibrations.

##### Maintenance of Safety Equipment

All protective equipment shall be properly maintained and thoroughly examined once a month and as soon as possible after each occasion of use. The manufacturer's advice should be followed regarding regular maintenance and servicing requirements.

#### SUPERVISION

The Site Supervisor will ensure that adequate supplies of all necessary protective clothing or equipment are available on site for issue as required.

The Site Supervisor will ensure that before employees are started on works, any necessary protective clothing is provided and that signs are erected for "no risk areas", machinery requiring eye protection, ear, defenders, etc.

Any person on site observed carrying out any process which requires the use of protective clothing or equipment will be informed of statutory and Company Policy requirements and instructed not to continue working until protective clothing or equipment is obtained. This applies to any Contractors as well as direct employees.

The Supervisor will ensure that the protective clothing or equipment is suitable for the specific process for which it is provided.

All supervisory and management staff will set a good example in the wearing of safety helmets, protective footwear and will use all necessary protective clothing and equipment where required.



### **3.9.2 MANUAL HANDLING AND LIFTING**

#### **HAZARDS**

The main injuries associated with manual handling and lifting are:

- Back strain, slipped disc.
- Hernias.
- Lacerations, crushing of hands or fingers.
- Tenosynovitis, heat conditions.
- Bruised or broken toes or feet.
- Various sprains, strains, etc.

The selection of persons to carry out manual handling or lifting tasks will be based on the training given, age, physical build, etc.

Where loads have to be manually handled, the need to ensure that accesses are safe is especially important.

The training provided should be based on the physical structure of the body and the effect of attempting to handle loads in various positions.

The employer shall take appropriate measures i.e. use of mechanical equipment to avoid the need for manual handling.

The employer should provide the employee with such means as to reduce the risk involved in the MH of loads, having regards to the risk factors specified in Schedule 3 of the General Application Regulation 2007.

#### **PLANNING PROCEDURES**

All work will be planned for taking into account the required Standards.

The Manager/Supervisor will ensure that materials are handled as far as possible by machine. Where the use of a machine is impracticable, sufficient labour must be available to handle any heavy or awkward loads and instructions must be issued to site on the handling of these loads.

All supervisory staff will be given training in the correct methods of handling and lifting loads as part of their normal site safety training.

#### **SUPERVISION**

Supervisory staff will instruct any operative in the correct handling and lifting of loads as required.

Supervisory staff will ensure that a supply of suitable gloves are available from issue as required for the handling of materials which could cause injuries to the hands.

The Company will encourage the wearing of safety footwear and supervisory staff will caution any employee or sub-contractor wearing unsuitable footwear.

The supervision will not require any operative, particularly a young person, to lift without assistance a load which is likely to cause injury.

#### **PRECAUTIONS**

No person should try to exceed their personal lifting capacity.

Employees who are expected to regularly lift heavy loads will receive training in kinetic handling techniques.

The following is provided for general guidance:

1. Look out for splinters, nails, wire etc.
2. Size up the job, remove obstructions, make sure there is a clear space where the load has to be set down. Ensure you can see over the load when carrying it.
3. Stand close to the object and with feet up to hip width apart, one foot in advance of the other, prepare to lift.
4. Bend your knees into a crouch position, back straight (not necessarily vertical).
5. Pull your chin in, avoid dropping your head forward.
6. A good palmar grip is required, preferably one hand around the front of the load and one hand underneath to prevent the load slipping forward to down.
7. Pull the object close to the chest, it is easier to handle and there is less chance of it slipping.
8. An even lift is required to complete the exercise.

**Remember:**

A sudden lift or jerk could result in back injury.

### ***3.9.3 SAFETY HELMETS***

All management, supervisory staff, visitors, contractors and employees shall wear safety helmets while on sites.

Before work starts, the Site Agent will ensure that any signs relating to the wearing of helmets are ordered and available for use on site and that employees/Contractors are made aware of the site requirements for the wearing of safety helmets.

All supervisory and management staff will set a good example in the wearing of safety helmets, protective footwear, etc. and will use all necessary protective clothing and equipment where required.

All personnel required to work with or near to excavators used as cranes will be required to wear safety helmets.

All personnel required to enter excavations must wear a safety helmet.

All personnel working with or near lifting appliances must wear safety helmets.

All personnel working with or near cranes must wear safety helmets.

Normal disciplinary proceedings will be used against employees not complying with these requirements.

## 3.10 Formwork & Concrete Placement

### 3.10.1

#### General Hazards:

The main hazards associated with falsework, formwork and concrete placement on manhole construction (foul & storm) are:-

- Working within deep excavations.
- Access and egress to the works.
- Open edges of finished manholes.
- Protruding pins / brackets in supports.
- Inadequate access / working platforms.
- Formwork inadequately supported.
- Damage to property.
- Mechanical / hydraulic failure of lifting plant.
- Incorrect connection of lifting tackle to shutters, reinforcement, etc.
- High winds.
- Loose pump / hose connections.
- Skin burns.

#### Risks Involved.

Fall from height when working on manholes.

Fall from height when working on column and beam formwork / shutters or edge of floor slabs.

Sudden collapse of columns or beams due to inadequate ties / clamps or supports.

Over pouring / spillage of concrete in close proximity to site boundary causing injury to employees.

Gusts of high winds on exposed beams, slabs or columns resulting in dislodgement of materials, tools or personnel.

Burns to skin from concrete additives.

Injuries to personnel from incorrect/protruding pins used in supports and protruding nails in stripped timbers.

Injuries to personnel beneath the range of lifting equipment caused by the sudden failure of lifting chains or plant.

When using compressed air to clear out debris, there is a risk of eye injury from fragments of tying wire, concrete chips, timber splinters, etc.

Pulsating hoses when using concrete pumps and loose connections may injure/knock personnel.

Lifting tackle connected to timbers / tying wire on steel bundles may give way when lifting with crane.

When using compressed air to clear debris, there is a risk of eye injury from fragments of tying wire, concrete chips, timber splinters.

#### Precautions to Guard against the Risk:

All materials, plant, etc. used in the erection of formwork will be free from defects and proper pins of correct diameter and length will be used in supports. All lifting equipment and lifting gear will have up to date certificates.

Only necessary materials will be stored at the workplace and will be weighted down or removed to a lower level during periods of anticipated high winds/gusts. Personnel will be removed from danger areas.

All necessary chutes, equipment and material will be provided to deflect concrete into formwork during pouring to avoid unnecessary spillage.

All personnel working with concrete will wear the necessary personal protective equipment to reduce risk of skin burns from contact with concrete.

When using compressed air, blow pipes to clean out shutters, eye protection will be worn by operator and material will be blown away from other personnel in the area.

Steel divi bolts or suitable equivalent will be used to attach lifting chains to timber shutters and chains will be wrapped around bundles of reinforcing steel, never connected to bundle tying wires.

Manhole excavations will be battered to a safe angle of repose, above the height of the manhole box.

An access ladder will be in position for safe access and/or egress to. The ladder will be securely tied at the top of the excavation.

During construction of the manholes, a protective barrier as per Section 3.1 above, will be erected and maintained. These barriers will be securely sealed off at the end of each working day.

All column shutters/formwork will be erected using tower scaffolds/trestles.

NOTE: Never climb column clamps.

Tower scaffolds (to regulation) will be used to provide an access for personnel and equipment when pouring concrete from skip or pump.

All beam shutters will have access platforms with handrails, toeboards and ladder access erected before work progresses on site shutters, steel, etc.

All pumping equipment will be maintained in a clean condition, free of defects and with properly secured coupling on hose connections.

## 3.11 Housekeeping

### 3.11.1 General Hazards:

#### HAZARDS FROM POOR HOUSEKEEPING:

Many accidents such as trips, slips and falls are due to poor housekeeping in the workplace. Workers have fallen from considerable heights and received only minor injuries, while others fall at one level and receive serious injuries sometimes fatal.

People can knock against sharp objects, stand on or fall on nails protruding from timber.

#### Risks Involved:

Nearly all slips, trips and falls resulting from poor housekeeping result in some type of injury. The risks are greatly increased if access walkways are untidy or if areas near edges are open, or untidy as people may be caused to fall from a height or material may be knocked onto somebody underneath.

#### Arrangements to Guard Against the Risks:

Site Management considers good housekeeping most important in providing a safe working place for all their employees, leads to good industrial relations and increased productivity. Management contribute to good housekeeping by:

Including housekeeping in the planning of all operations by setting up control measures and regulating work practices.

Providing equipment to maintain all work areas in a clean and orderly state including waste bin, cleaning equipment, storage areas, etc.

Including good housekeeping as part of every individuals job responsibility at all levels of the organisation.

Providing cleanup schedules and personnel when required.

Maintaining control of work places and interest in good housekeeping practices.

#### Supervisors:

Supervisors have a role in safeguarding against trips, slips and falls and play their part by:

Maintaining constant vigilance on good housekeeping practices.

Having poor situations corrected and cleaned up immediately.

Seeing that employees play their part in ensuring good housekeeping.

Issue clear instructions to employees on standards of housekeeping required.

Insisting on clean up of work areas after every job.

Prohibit leaving materials, tools or equipment in passageways, gangways, walkways, etc.

#### Employees:

All employees are instructed in good housekeeping practices and play their role by:

Following all instructions as to maintaining good housekeeping.

Prompt reporting of any poor housekeeping conditions or practices that may be found.

**General Guidelines for Good Housekeeping:**

Orderly arrangement of activities, operations and equipment.

Provision of a definite place for each item, article or substance.

Keeping each article or substance in its designated place or returning it if removed.

Provision of adequate disposal arrangements of scrap, waste and surplus materials.

General cleanliness of all work areas and equipment.

Sufficient working spaces and adequate level passageways for safe access and egress.

Adequate space for materials, tools and portable equipment.

Anticipation of waste, scrap, spillage, leakage, dust, splashing and provision of some means of control. Only the materials required for that day to be taken to the workplace and return all surplus materials to the stores or stockpiles at the completion of the job or end of the day.

Removing any obstruction found, do not leave it for someone else, removal and control of all sharp objects especially nails.

Keep changing rooms, canteens, offices and all facilities clean and free of build-up of waste materials.

Never ignore a housekeeping hazard, put it right.

## 3.12 Works over Water

### 3.12.1 General Hazards:

#### HAZARDS DUE TO WORK OVER WATER:

1. The usual risks of construction work are generally increased in work over water, particularly those associated with falling.
2. There are additional serious risks such as falling into the water, being washed away from platforms and the likes, possibly resulting in the victim suffering from severe shock and/or exposure or being drowned.

The Safety Officer / Site Agent should check that:-

- Platforms are strong, secure and safe.
- Pontoons are well anchored and have sufficient ballast for stability.
- Walkways are of adequate width.
- Sloping walkways have tread boards.
- Guard rails and toeboards should be fitted.
- Sufficient hand holds be provided.
- Ladders are securely lashed.
- There are sufficient secure fastenings to combat high winds or heavy swell.
- Barriers and fences are provided along all edges bounding water.
- Safety hoops are provided to ladders over 3m long.
- Safety nets be slung clear of water (allowance to be made for tidal range, and for headroom clearance for rescue boats).
- Simple and informative warning notices are put in place.
- Lifebuoys (with lights at night) are provided.
- Lifelines and Safety Belts are provided at suitable locations and that
- Life Jackets are worn at all relevant times.
- Drip trays are provided to collect oil spillage.
- Good illumination is provided for night working with illumination of adjacent water and spotlights for rescue.
- Arrangements are made for obtaining local weather forecasts at least twice daily.
- Buoyant grab lines trailing in the water are provided.
- Non-slip sole footwear only to be used.
- Rescue Boat is available and ready at all times.
- Resuscitation equipment (with a trained first aid attendant) is available.



- Navigation lights and Foghorns are fitted as may be required by the Water Authorities.
3. An Alarm and Rescue Drill should be established and a daily check of all rescue gear be carried out.
  4. All employees should watch out for:-
    - tools, ropes, debris etc. which could cause a hazard, and ensure that effective action is taken to deal with them.
    - slippery surfaces; seaweed, sea-slime, bird lime, oil, grease, ice, frost.
    - deceptive shadows.
    - changing weather conditions.
  5. Two operatives trained in first aid and experienced in the handling of boats should be available at all times and with a rescue boat on standby kitted with three oars, grablines, lifebuoys, spotlights, and first aid supplies in a waterproof container.
  6. The Safety Officer should check locally for any special requirements under:-
    - Docks regulations.
    - Bye laws of:-
      - Port Authorities
      - Harbour Authorities
      - Local Authorities

## 3.13 Fire

### 3.13.1 General Hazards:

#### HAZARDS :

#### 1. Possible Causes.

- Careless smoking
- Radiant electric heaters.
- Coal fired stoves.
- Gas fires
- Spillage of fuels.
- Rubbish burning.
- Leaking gas cylinders.
- Flammable rubbish.
- Faulty electrical wiring or appliances.

#### Hazards

- Lack of alternative exit from buildings or confined spaces.
- Escape routes blocked by stacks of materials, inside or outside.
- Corridors blocked.
- Fire doors wedged open (or held open by fire extinguishers).
- No fire extinguishers.
- Fire extinguishers out of order.
- Use of wrong type of fire extinguisher.
- Method of using fire extinguishers not known.
- Fire extinguishers frozen.
- No fire drills.

#### Recommended Fire Procedures

#### A. Immediate Action:

1. If electrical equipment is involved in the fire, switch it off.
2. If a person's clothing is on fire, lay the victim flat, smother flames with coat or blanket, rolling him/her over to put the flames out.
3. Attempt to put out the fire using hoses or suitable extinguishers.
4. Shut doors and windows to reduce draughts and contain the fire.

#### B. Warning:

If there is even the smallest possibility that the fire will gain control:-

1. Warn everyone in the building or vicinity.
2. Warn the Fire Station.

#### C. Evacuation:

When warned, everyone must leave the building immediately and assemble outside for a roll call to ensure that everyone has escaped.

## 3.14 Radiography & Ionising Radiation

### 3.14.1 General Hazards:

1. Radiography, for inspection and non-destructive testing, uses X-rays or gamma rays (from a radio-active sealed source) and normally takes place inside a walled enclosure in a factory. On construction sites, e.g. when testing pipeline welds, this is not so and consequently, there is a much greater risk.
2. Only authorised persons and competent classified workers will be permitted to carry out radiological work and enter the relevant work areas and all of them must have familiarised themselves with the contents of Technical Data Note 37 (UK Factory Inspectorate).
3. Handling or touching a radio-active source can cause severe burns. The degree of risk of harm (cancer, permanent genetic damage, etc.) depends on the length of time of exposure and on how close to the source the person has been.
4. **General Precautions**
  - Keep away from vehicles containing or transporting radio-active sources.
  - Keep away from persons carrying radio-active sources to and from their place of work.
  - Watch out for and take heed of warning signs and barriers.
  - Do not enter the radiography working area, marked by notices and barriers.
  - Do not linger in the surrounding radiation area, marked by further notices and barriers.
  - Warn other contractors so that their workmen do not disturb, move or destroy the radio-active source storage pit on the site.
  - If you find what you believe may be an unmarked radio-active source keep away from it. Do not pick it up or touch it. Warn others in the vicinity to keep clear and inform the supervisor immediately.
  - If any person thinks that he/she may have been exposed to a radiation source on the site then that person must inform the supervisor and arrangements will be made for him to be examined by a doctor immediately.

## 3.15 Shafts, Tunnels and Confined Spaces

### 3.15.1 General Hazards:

#### 1. Ground Support.

- Make sure that rock surfaces are properly scaled, lagged or otherwise supported so that loose rock cannot fall.
- Make sure that ground support rings or segments are properly installed, wedged and not showing signs of distress.

#### 2. Ventilation.

- Beware of poisonous fumes due to the use of explosives or inefficient exhaust scrubbers.
- Beware of noxious, suffocating or explosive gases which may occur naturally (especially in sewers) e.g. Methane, Carbon Dioxide.
- Ensure that adequate ventilation is maintained and after blasting, or a period when the ventilation system has not been working, allow ample time for complete ventilation before entering.
- Avoid duct from sprayed concrete, drilling, etc. and wear a face mask in dusty conditions.
- Prior to entry check safety with a gas detector.

#### 3. General.

Tunnels and shafts are usually very congested during construction.

- Do not enter unless required to work inside the tunnel or shaft.
- Beware of moving conveyors, trains, trucks, power lines, compressed air lines, skips, etc.
- Carry a torch so that you can see and be seen if there is a power failure.
- Do not look into laser beams.
- Program survey work for times when construction work is not in progress.
- Check on risks of flooding, collapse of the face or roof and take the necessary precautions.

## 3.16 Explosives

### 3.16.1 General Hazards:

The Company's employees will not normally be required to handle explosives. However, since mis-handling can constitute a risk to everyone in the vicinity, general safe practice is outlined so that appropriate action can be taken if unsafe practice is noticed.

#### 1. Storage and Issue

- Magazine, when permitted on site, should be clean, dry, well ventilated, well constructed, securely locked and lined with wood.
- Explosives and detonators must be stored separately.
- Smoking or matches or open lights are not to be permitted in or near the magazine or while handling explosives or detonators.
- Metal tools are not to be kept in the magazine. Only wooden or non-ferrous tools should be used for opening cases.
- Cases of explosives are not to be dropped and are to be handled with extreme care.
- Explosives and detonators are to be issued in the sequence of manufacturing dates marked on the cases.
- Cases are not to be opened inside a magazine.
- Primer cartridges are not to be made up inside a magazine.
- Boxes of explosives and detonators must not be transported with any inflammable liquids or metal objects that could cause a spark.
- Whenever practicable, explosives and detonators should be carried in separate vehicles. If this is not practicable they must be carried in separate containers.

#### 2. Safety before a Blast

- Only the required amount of explosives and detonators should be taken to the blast area.
- Explosives and detonators must be kept apart from each other until the last possible moment. Detonators must be stored separately in insulated containers and explosives must be stored in suitable wooden containers or huts.
- Primers which consist of a cartridge of explosive with a capped fuse or electric detonator should never be made up except at the workface and then only immediately before loading
- Once a primer is completed, particular care should be taken not to deform, drop or abuse it at any time.
- When electric detonator are being used the leading wires should be kept shunted and away from conductors or sources of stray current. The wires should be uncoiled carefully. All operations must cease and everyone be removed to a safe distance on the approach of an electric storm and all detonators should be replaced inside the insulated container.
- When safety fuse is used it must be protected from moisture and damage. In preparing capped fuse about 100mm should be cut from the exposed end of a roll of safety fuse to guard against the possibility of a damp end being inserted in a detonator. The fuse should always be cut straight and clean with a very sharp tool. Fuses should be carefully inserted in the detonators to the full depth and securely seated on the base charge, finally being crimped with a proper detonator crimping tool to prevent the entry of moisture or the end becoming unseated.
- Shotholes should be examined before charging to ensure that they are free of obstructions.
- Charging operations should only be carried out by or under the personal supervision of the shotfirer.

- Wrappings should not be removed from explosive cartridges which should be inserted into shotholes one at a time.
- Only wooden tools should be used for loading and stemming shotholes.
- After the primer is in position the leading wires, fuse or Cordtex extending from it should be kept taut while the remainder of the charge and stemming are loaded. When Cordtex is used, the down line must be cut from the reel after the primer is in position before any further cartridges are introduced into the borehole.

### 3. Safety in Firing Blast.

- With electric shotfiring all electric connections, the number of which should be kept as small as possible, should be made by the shotfirer himself. The shotfirer should always keep the exploder handle on his person until he is ready to fire the shots. In damp and wet conditions joint insulator should be used to cover all joints and no wire in the shotfiring circuit should be run anywhere near other electric cable or apparatus
- With safety fuse shotfiring, the lengths of fuse should be sufficiently long to allow ample time for the shotfirer to retire to a place of safety after lighting the shorts by walking, not running. (The time provided by safety fuse is 100 to 160 seconds per metre length). No attempt should be made to light more fuses than can be done safely, and ends of fuses should be dry and properly trimmed so that they can be lit with ease. Proper fuse lighters should be used (except when the safety fuse is igniter cord).
- When the blast is ready for firing the shotfirer must make sure:
  - \* that a clear adequate warning signal is given. A siren should be sounded three times five minutes before the blast and it should be sounded once again five minutes after the blast.
  - \* that all approaches are effectively guarded so as to prevent any access by any person while the shots are being fired and until the all clear is given.
  - \* that all persons, including himself, have taken adequate cover. Everyone must be to the rear or side of a blast, and on no account should anyone be allowed to stand in front of the face to be blasted.

### 4. Safety after firing a Blast.

- No one should return to the blast area too soon after a blast has been fired. It is best to wait for the time appropriate to known or assumed misfired charge (5 minutes for electric firing and 30 minutes for safety fuse firing).
- The area must be carefully examined by the shotfirer or shift boss and by nobody else for any undetonated explosives, misfired or cut-off holes before any other person is allowed to return.

### 5. General Points.

- With electric detonators guard against extraneous electrical energy which might come from lightning, static electricity (from dust storms, snow storms, moving conveyor belts, etc.), stray currents (from poorly earthed electrical equipment, badly insulated power lines, etc.), galvanic electricity (using metal rather than wooden loading poles) or electro-magnetic radiation (radar, radio, television, etc. Portable walkie-talkie sets and site car transmitters should not be taken within 10 metres of a blasting site. If powerful transmitters are in the neighbourhood expert advice should be obtained).
- Blasting operations should be carried out only by qualified and fully competent persons properly appointed.

- Site personnel are to cooperate fully with the requirements of the Gardai and in particular with those of their representative who is assigned to each consignment of explosive materials.
- Special care should be taken with secondary blasting ('pop' shooting). The fact that charges are small tends to lead to carelessness, but in practice rock scatter can be greater than with primary blasting and misfires are harder to detect.
- Useful publications and advice can be obtained from Irish Industrial Explosives. The publications include:-
  - \* Bulletin No. 101
  - \* Bulletin No. 201
  - \* Bulletin Nos. 301, 311, 321
  - \* Bulletin No. 401
  - \* Bulletin Nos. 501, 551
  - \* Bulletin No. 651
  - \* Bulletin No. 700
  - \* Bulletin No. 802