L.N. 379 of 2003

OCCUPATIONAL HEALTH AND SAFETY AUTHORITY ACT (CAP. 424)

Protection of Workers in the Mineral Extracting Industries through Drilling and Workers in Surface and Underground Mineral Extracting Industries Regulations, 2003

IN exercise of the powers conferred by article 12 of the Occupational Health and Safety Authority Act, the Deputy Prime Minister and Minister for Social Policy, in consultation with the Occupational Health and Safety Authority, has made the following regulations:-

Citation, commencement and scope.

1. (1) The title of these regulations is the Protection of Workers in the Mineral Extracting Industries through Drilling and of Workers in Surface and Underground Mineral Extracting Industries Regulations, 2003.

(2) These regulations, together with their Annexes, shall come into force:

(a) on the date of publication for all workplaces used for the first time after date of publication of these regulations; and

(b) on the 1st May, 2004 for all workplaces already in use before the date of publication of these regulations.

(3) An employer shall ensure that all changes, extensions and, or conversions carried out after the coming into force of these regulations satisfy the requirements laid down in the Annexes.

Definitions.

2. In these regulations, unless the context otherwise requires -

"the Act" means the Occupational Health and Safety Authority Act; Cap. 424.

"Authority" means the Occupational Health and Safety Authority established by virtue of article 8 of the Act;

"detonator" means an initiator for explosives that contains a charge of high explosive fired by means of a flame, spark, electric current or shock tube;

"excavation" means any place at the quarry where minerals are or have been extracted and includes the ground, faces or sides of the quarry and any other incline;

Cap. 33.

"explosive" shall have the same meaning assigned to it in the Explosives Ordinance;

"General Provisions' means the General Provisions for Health and Safety at Work Places Regulations, 2003;

"mineral-extracting industries through drilling" means any industry practising extraction, in the strict sense of the term, of minerals through drilling by boreholes, prospection with a view to such extraction or preparation of extracted materials for sale, in the latter case excluding the activities of processing the materials extracted;

"misfire" means an occurrence in relation to the firing of shots where testing before firing reveals broken continuity which cannot be rectified or when a shot or any part of a shot fails to explode when an attempt is made to fire it;

"quarrying" shall have the same meaning assigned in these regulations to surface and underground mineral-extracting industries and shall exclude any work executed on public roads and any excavation made for the purpose of, or in connection with the extraction of such minerals where the exclusive purpose of that extraction is to enable the minerals so extracted to be used for the purpose of carrying out any building, civil engineering or engineering construction work on the site at which the extraction has taken place;

"surface and underground mineral-extracting industries" means any industry practising surface or underground extraction, in the strict sense of the term, of minerals, prospection with a view to such extraction or preparation of extracted materials for sale, in the latter case excluding the activities of processing the materials extracted and in all cases excluding the mineral-extracting industries through drilling;

"shotfirer" means a person appointed pursuant to regulation 4 (3)(ii), Annex IV, to be responsible for shotfiring operations;

"Workers" Health and Safety Representative" and "Representative" mean a Workers" Health and Safety Representative appointed in terms of article 6 (4) of the Act.

Applicability of the Annexes.

3. The obligations laid down in the Annexes to these regulations apply whenever required by the features of the workplace, the activity, the circumstances or a specific risk and are without prejudice to the general application of the provisions of the Act or the General Provisions.

General obligations

4. In the fulfilment of the principles prescribed under section 6 of the Act and under regulation 4 of the General Provisions, it shall be the duty of an employer to take the necessary measures to ensure that:

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(a) workplaces are designed, constructed, equipped, commissioned, operated and maintained in such a way that workers can perform the work assigned to them without endangering their health and safety andċor the health and safety of other workers;

(b) the operation of work places when workers are present takes place under the supervision of a person in charge;

(c) work involving a special risk is entrusted only to competent workers and carried out in accordance with the instructions given by the employer;

(d) all safety information, instruction, training and supervision is provided in such a manner that is comprehensible to all the workers concerned;

(e) appropriate first-aid facilities are provided;

(f) safety drills are performed at regular intervals.

Health and Safety Document.

5. (1) The employer shall draw up and keep up to date a Health and Safety Document.

(2) It shall be drawn up prior to the commencement of work and be revised if the workplaces undergoes major changes, extensions or conversions.

(3) It shall contain:

(a) an assessment of the risks to health and safety incurred by the workers at the work place;

(b) a description of the protective measures taken;

(c) declarations that the design, use and maintenance of the workplace and of the equipment are safe;

(d) reports on occupational accidents suffered by the workers;

(e) any information yielded by protective and preventive measures and, or provided by the Authority;

(f) any information required by any provision of these regulations;

(g) details of the management structure and of the authority and duties of each person in the management structure;

(h) details of the work-permit system specified in regulation 7, Annex 1.

(4) The Health and Safety Document shall be made accessible to the Workers' Health and Safety Representative referred to in article 6 (4) of the Act or to any other person with specific functions in protecting the health and safety of workers.

Workers from several companies.

6. (1) Where workers from several companies or enterprises are present at the same workplace, each employer shall be responsible for all matters under his control.

(2) The employer responsible for the workplace shall co-ordinate the implementation of all the measures concerning the health and safety of the workers and shall state, in the Health and Safety Document, the aim of that co-ordination and the measures and procedures for implementing it.

(3) The co-ordination shall not affect the responsibilities stipulated in the Act for the individual employers.

Protection from fire, explosions, etc.

7. The employer shall take measures and precautions appropriate to the nature of the operation to avoid, detect and combat the starting and spread of fires and explosions and to prevent the occurrence of explosive and, or health-endangering atmospheres.

Escape and rescue facilities.

8. The employer shall provide and maintain appropriate means of escape and rescue to ensure that workers have adequate opportunities for leaving the workplaces promptly and safely in the event of danger.

Warning and alarm systems.

9. The employer shall take the requisite measures to provide the necessary warning operations to be launched immediately if the need arises.

Keeping workers informed.

10. (1) Without prejudice to article 6 (3) of the Act, the employer shall inform the Workers' Health and Safety Representative and the workers of all measures to be taken concerning health and safety at workplaces, and in particular of those relating to the implementation of regulations 5 to 11.

(2) The information shall be comprehensible to all the workers concerned.

Medical examinations.

11. (1) Each worker shall undergo, at the expense of the employer, a medical examination before being assigned to duties related to any of the activities covered by these regulations.

(2) Subsequently, the medical examinations shall be carried out at regular intervals.

The Workers Health and Safety Representative.

12. (1) The Workers' Health and Safety Representative shall be consulted in the manner specified in Article 6 (4) of the Act and in regulation 13 of the General Provisions.

(2) The Workers' Health and Safety Representative shall have the right to ask the employer to take appropriate measures, and the right to submit proposals to him to that end, so as to mitigate hazards for workers and, or remove sources of danger.

(3) The Workers' Health and Safety Representative shall not be placed at a disadvantage owing to his activities.

Non-applicability to mineral extraction by dredging.

13. These regulations shall not apply to mineral-extraction by dredging provided that the protection of the workers concerned is ensured in line with the general principles of health and safety of workers specified in these regulations, taking into account the specific risks involved in mineral-extraction by dredging.

Annex I

Requirements applicable to:

- the on-shore and off-shore sectors of the mineral-extracting industries through drilling; and

- the surface and underground mineral-extracting industries; and

- ancillary surface installations

General.

1. (1) Workplaces shall be so organised as to provide adequate protection against hazards.

(2) They shall be kept clean, with any hazardous substances or deposits removed or controlled in order not to endanger the health and safety of workers.

(3) Workstations shall be designed and constructed according to ergonomic principles taking into account the need for workers to follow operations carried out at their workstations.

(4) Areas within which there is a special hazard shall be delineated and warning signs placed.

(5) Where workstations are occupied by lone workers, adequate supervision or means of communication shall be provided.

Supervision at the workplace.

2. (1) At all times whenever workers are present at a workplace, such a workplace shall be placed under the charge of and be supervised by either:

(a) a responsible person who has the skills and competence required for this duty, in accordance with any other laws regulating such duties, and who has been appointed by the employer; or

(b) the employer if he has the above-mentioned skills and competence.

(2) Where required by the Health and Safety Document, a supervisor shall visit occupied workstations at least once during each shift.

Competent workers.

3. When workers are present at any workplace, there shall be a sufficient number of workers with the requisite skills, experience and training to perform the tasks assigned to them.

Information, instruction and training.

4. Workers shall be given the necessary comprehensible information, instructions, training and retraining to ensure their health and safety.

Written instructions.

5. Written instructions shall be drawn up for every workplace specifying rules to be observed to ensure the health and safety of workers and the safe use of equipment and including information on the use of emergency equipment and action to be taken in the event of an emergency at or near the workplace.

Safe working methods.

6. Safe working methods shall be applied at each workplace or in respect of each activity.

Work permits.

7. (1) Where required by the Health and Safety Document, the employer shall introduce a system of work permits for carrying out:

(a) hazardous activities; and

(b) usually straightforward activities which may interact with other activities to cause serious hazards

(2) The work permits shall be issued by a person in charge prior to the commencement of work and shall specify the conditions to be fulfilled and the precautions to be taken before, during and after the work.

Review of measures.

8. The employer shall ensure that the measures taken to protect the health and safety of the workers, including the health and safety management system, are regularly reviewed to ensure compliance with these regulations.

Mechanical and electrical equipment.

9. (1) Selection, installation, commissioning, operation and maintenance of mechanical and electrical equipment shall take place with due regard for the safety and health of workers, taking into consideration other provisions of these regulations.

(2) If located in an area within which risk of fire or explosion from ignition of gas, vapour or volatile liquid exists or is likely to exist, it shall be suitable for use in that area.

(3) Equipment shall, if necessary, be fitted with suitable protective devices and failsafe systems.

10. (1) Mechanical equipment and plant shall be of adequate strength and free from patent defect and suitable for the purpose for which it is intended.

(2) Electrical equipment and plant shall be of sufficient size and power for the purpose for which it is intended.

11. Mechanical and electrical equipment and installations shall be so installed and protected as to prevent danger.

Suitable system of maintenance for equipment.

12. (1) The employer shall set up a suitable system of maintenance and, where appropriate, for the testing of mechanical and electrical equipment and plant.

(2) All maintenance, examination and testing of any part of the plant and equipment shall be carried out by a competent person.

(3) The employer shall keep records of such examinations and tests.

13. Adequate safety equipment shall be at all times maintained ready for use, in good working and with due regard to operations.

Harmful atmospheres and explosion risks.

14. (1) Measures shall be taken for assessing the presence of harmful and/or potentially explosive substances in the atmosphere and for measuring the concentration of such substances.

(2) Where required by the Health and Safety Document, monitoring devices measuring gas concentrations at specified places automatically and continuously, automatic alarms and devices to cut off power automatically from electrical installations and internal combustion engines shall be provided.

(3) Where automatic measurements are provided for, the values measured shall be recorded and kept as stipulated in the Health and Safety Document.

Accumulation of harmful substances.

15. (1) Where harmful substances accumulate or may accumulate in the atmosphere, appropriate measures shall be taken to ensure:

(a) their suppression at source; or

(b) their extraction and removal at source; or

(c) the dilution of accumulations of such substances.

(2) The system must be capable of dispersing such harmful atmosphere in such a way that workers are not at risk.

Breathing equipment.

16. (1) Without prejudice to the provisions of the Minimum Requirements for the Use of Personal Protective Equipment at Work Regulations, 2002, appropriate and sufficient breathing and resuscitation equipment shall be available in areas where workers are be exposed to atmospheres which are harmful to health.

(2) In such cases, a sufficient number of workers trained to use such equipment shall be present at the workplace.

(3) The equipment shall be suitably stored and maintained.

(4) Where hydrogen sulphide or other toxic gases are or may be present in the atmosphere, a protection plan detailing the protective equipment available and the preventive measures taken shall be prepared and made available to the Authority.

Prevention of risks of explosion.

17. (1) All necessary measures shall be taken to prevent the occurrence and accumulation of explosive atmospheres.

(2) In areas where there are risks of explosion, all necessary measures shall be taken to prevent the ignition of explosive atmospheres.

(3) An explosion prevention plan detailing the equipment and measures required shall be prepared included in the Health and Safety Document.

Emergency routes and exits.

18. (1) Emergency routes and exits shall remain clear and lead by the most direct means to the open air or to a safe area, a safe assembly point or a safe evacuation point.

(2) The employer shall ensure that, in the event of danger, it would be possible for workers to evacuate all workstations quickly and as safely as possible.

(3) The number, distribution and dimensions of the emergency routes and exits depend on the use, equipment and dimensions of the workplaces and the maximum number of persons that may be present.

(4) Accommodation and rest rooms shall have at least two separate escape routes situated as far apart as possible and leading to a safe area, a safe assembly point or a safe evacuation point.

Emergency doors.

19. (1) Emergency doors shall open outwards or, if this is impossible, be sliding doors.

(2) They should no be so locked or fastened that they cannot be easily and immediately opened by any person who may require to use them in an emergency.

Routes and exits indicated by signs.

20. (1) Specific emergency routes and exits shall be indicated by signs in accordance with the Work Place (Provision of Health andċ or Safety Signs) Regulations, 2002.

(2) Emergency routes and exits requiring illumination must be provided with emergency lighting of adequate intensity in case the lighting fails.

21. (1) Emergency doors shall not be locked or otherwise blocked.

(2) The emergency routes and exits, and the traffic routes and doors giving access to them, must be free from obstruction so that they can be used at any time without hindrance.

Ventilation of enclosed spaces.

22. (1) Steps shall be taken to ensure that there is sufficient fresh air in enclosed workplaces, having regard to the working methods used and the physical demands placed on the workers.

(2) If a forced ventilation system is used, it shall be maintained in working order.

(3) Any breakdown shall be indicated by a control system where this is necessary for workers' health.

Air-conditioning, mechanical ventilation.

23. (1) If air-conditioning or mechanical ventilation installations are used, it shall be ensured that they operate in such a way that workers are not exposed to draughts which cause discomfort.

(2) Any deposit or dirt likely to create an immediate danger to the health of workers by polluting the atmosphere shall be removed without delay.

Room temperature.

24. (1) During working hours, the temperature in rooms containing workplaces shall be adequate for human beings, having regard to the working methods being used and the physical demands placed on the workers.

(2) The temperature in rest areas, rooms for duty staff, sanitary facilities, canteens and first aid rooms shall be appropriate to the particular purpose of such areas.

(3) Windows, skylights and glass partitions should allow excessive effects of sunlight in workplaces to be avoided, having regard to the nature of the work and of the workplace.

Floors, walls, ceilings and roofs.

25. (1) The floors of workplaces shall have no dangerous bumps, holes or slopes and must be fixed, stable and not slippery.

(2) Workplaces containing workstations shall be adequately insulated against heat, bearing in mind the type of undertaking involved and the physical activity of the workers.

(3) The surfaces of floors, walls and ceilings in rooms shall be such that they can be cleaned or refurbished to an appropriate standard of hygiene.

(4) Transparent or translucent walls, in particular all-glass partitions, in rooms or in the vicinity of workplaces and traffic routes shall be clearly indicated and made of safety material or be shielded from such place or traffic routes to prevent workers from coming into contact with walls or being injured should the walls shatter.

(5) Access to roofs made of materials of insufficient strength shall not be permitted unless equipment is provided to ensure that the work can be carried out in a safe manner.

Natural and artificial lighting.

26. (1) Every workplace shall be provided throughout with lighting capable of supplying illumination sufficient to ensure the health and safety of persons therein.

(2) Workplaces shall as far as possible receive sufficient natural light and be equipped, taking into account climatological conditions, with artificial lighting adequate for the protection of workers' safety and health.

(3) Lighting installations in rooms containing workplaces and in passageways shall be placed in such a way that the type of lighting does not present a risk of accident to workers.

(4) Workplaces in which workers are especially exposed to risks in the event of failure or artificial lighting shall be provided with emergency lighting of adequate intensity or, in case this is impossible, the workers shall be provided with personal lamps.

(5) Lighting installations shall be designed to ensure that operational control areas, escape routes, embarkation areas and hazardous areas remain illuminated.

(6) Where workplaces are occupied only occasionally, the obligation referred to in paragraph (5) is limited to the period during which workers are present.

Windows and skylights.

27. (1) Windows, skylights and ventilation devices which are meant to be opened, adjusted or secured shall be designed so that these operations can be carried out safely.

(2) They shall be positioned so as not to constitute a hazard to workers when open.

(3) The employer shall ensure that windows and skylights can be cleaned without risk.

Doors and gates.

28. (1) The position, number and dimensions of doors and gates, and the materials used in their construction, are determined by the nature and use of the rooms or areas.

(2) Transparent doors shall be appropriately marked at a conspicuous level.

(3) Swing doors and gates shall be transparent or have see-through panels.

(4) If transparent or translucent surfaces in doors and gates are not made of safety material and if there is a danger that workers may be injured if a door or gate should shatter, the surfaces shall be protected against breakage.

(5) Sliding doors shall be fitted with a safety device to prevent them from being derailed and falling over unexpectedly.

(6) Doors and gates opening upwards shall be fitted with a mechanism to secure them against falling back unexpectedly.

(7) Doors along escape routes shall be appropriately marked and the employer shall ensure that it is possible to open them from the inside at any time without special assistance as well as when the workplaces are occupied.

29. (1) Doors for pedestrians shall be provided in the immediate vicinity of any gates intended essentially for vehicle traffic, unless it is safe for pedestrians to pass through;

(2) Such doors shall be clearly marked and left permanently unobstructed.

30. The employer shall ensure that mechanical doors and gates:

(a) function without risk of accident to workers;

(b) are fitted with easily identifiable and accessible emergency shut-down devices and, unless they open automatically in the event of a power failure, they can be also be opened manually.

Chains, devices to prevent access.

31. Where chains or similar devices are used to prevent access at any place, these shall be clearly visible and appropriately identified by signs denoting any prohibition or warning.

Traffic routes.

32. (1) It shall be possible to reach workplaces without danger and leave them quickly and safely in an emergency.

(2) Traffic routes, including stairs, fixed ladders and loading bays and ramps, shall be calculated, dimensioned and located to ensure easy, safe and appropriate access for pedestrians or vehicles in such a way as not to endanger workers employed in the vicinity of these traffic routes.

33. (1) Routes used for pedestrian traffic and/or goods traffic shall be dimensioned in accordance with the number of potential users and the type of company or enterprise.

(2) If means of transport are used on traffic routes, a sufficient safety clearance shall be provided for pedestrians.

34. Sufficient clearance shall be allowed between vehicle traffic routes and doors, gates, passages for pedestrians, corridors and staircases.

35. Traffic and access routes shall be clearly identified for the protection of workers.

Traffic regulations.

36. Where vehicles or machines enter workplaces, traffic regulations shall be established as necessary.

Danger areas.

37. If the workplaces contain danger areas in which, owing to the nature of the work, there are risks including that of the worker or objects falling, the places shall be equipped, as far as possible, with devices preventing unauthorized workers from entering those areas.

38. (1) Appropriate measures shall be taken to protect workers authorized to enter danger areas.

(2) Dangers areas shall be clearly indicated.

Workrooms.

39. Workrooms shall have sufficient surface area, height and air space to allow workers to perform their work without risk to their safety, health or well-being.

40. The dimensions of the unoccupied area at the workstation shall allow workers sufficient freedom of movement and enable them to perform their work safely.

Restrooms.

41. (1) Where the safety or health of workers, in particular because of the type of activity carried out or the presence of more than a certain number of employees, so requires, workers shall be provided with an easily accessible rest room.

(2) Rest rooms shall be large enough and equipped with an adequate number of tables and seats with backs for the number of workers.

(3) If working hours are regularly and frequently interrupted and there is no rest room, other rooms shall be provided in which workers can stay during such interruptions, wherever this is required for the safety or health of workers.

(4) In rest rooms or in any other room categorised under paragraph (3), appropriate measures shall be taken for the protection of non-smokers against discomfort caused by tobacco smoke.

(5) This regulation does not apply if the workers are employed in offices or similar workrooms providing equivalent relaxation during breaks.

Outdoor workplaces.

42. (1) Workstations, traffic routes and other areas or installations outdoors which are used or occupied by the workers in the course of their activity shall be organized in such a way that pedestrians and vehicles can circulate safely.

(2) Workplaces outdoors shall be adequately lit by artificial lighting if daylight is not adequate.

(3) When workers are employed at workstations outdoors, such workstations shall as far as possible be arranged so that workers:

(a) are protected against inclement weather conditions and if necessary against falling objects;

(b) are not exposed to harmful noise levels nor to harmful external influences such as gases, vapours or dust;

(c) are able to leave their workstations swiftly in the event of danger or are able to be rapidly assisted;

(d) cannot slip or fall.

Pregnant women.

43. Pregnant women and nursing mothers shall be provided the facilities to lie down to rest in appropriate conditions.

Access for All-Design Guidelines.

44. (1) If necessary, workplaces shall be organized to take account of disabled workers in accordance with the Access for All / Design Guidelines published by the National Commission Persons with Disability

(2) This provision applies in particular to the doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by disabled persons.

Annex II

Special requirements applicable to the on-shore sector

Consideration of environmental forces.

1. (1) Workplaces shall be designed, constructed, erected, operated, supervised and maintained to withstand the environmental forces anticipated.

(2) They shall have a structure and solidity appropriate to the nature of their use.

Fire detection and fire-fighting.

2. (1) Wherever workplaces are designed, constructed, equipped, commissioned, operated or maintained, adequate measures shall be taken to prevent fires from starting and spreading from the sources identified in the Health and Safety Document.

(2) Provision shall be made for fast and effective fire-fighting.

Fire-fighting equipment.

3. (1) Workplaces shall be equipped with appropriate fire-fighting equipment and, as necessary, with fire detectors and alarm systems.

(2) Non-automatic fire-fighting equipment shall be easily accessible and simple to use and, where necessary, protected from damage.

(3) A fire protection plan detailing the precautions to be taken, in accordance with regulations 5 to 11 of these regulations, to protect against, detect and combat the outbreak and spread of fires shall be kept on site.

(4) The fire-fighting equipment must be indicated by long-lasting signs at appropriate points in accordance with the Work Place (Provision of Health and‹or Safety Signs) Regulations, 2002.

Remote control in emergencies

4. (1) Where required by the Health and Safety Document, certain equipment shall be capable of remote control at suitable locations in the event of an emergency.

(2) Such equipment shall include systems for the isolation and blowdown of wells, plant and pipelines.

5. (1) Suitable well control equipment shall be provided for use during borehole operations to protect against blowouts. Protection against blowouts.

(2) Deployment of such equipment shall take into account the prevailing well and operational conditions.

6. Where required by the Health and Safety Document, every workplace at which workers are present shall be provided with: General and emergency communication.

(a) an acoustic and optical system capable of transmitting an alarm indication to every manned part of the workplace as necessary;

(b) an acoustic system capable of being heard distinctly at all parts of the installation where workers are frequently present.

7. Facilities for raising the alarm shall be provided at suitable locations.

8. When workers are present at workplaces which are not normally manned, appropriate communication systems must be placed at their disposal.

9. Where required by the Health and Safety Document, safe assembly points shall be specified, muster lists shall be maintained and the necessary action shall be taken. Assembly points.

10. Workers shall be trained in the appropriate actions to be taken in emergencies. Emergency training for workers.

11. Rescue equipment must be provided at readily accessible and appropriately sited places and kept ready for use. Rescue equipment.

12. Where escape routes are difficult and where irrespirable atmospheres are or may be present, self-contained escape apparatus must be provided for immediate use at the workstation.

13. (1) Safety drills shall be held at regular intervals at all workplaces at which workers are usually present. Safety drills.

(2) These shall be directed towards the training and checking of the skills of workers to whom specific duties have been assigned in the event of emergency involving the use, handling or operation of emergency equipment, taking into account the criteria laid down in the Health and Safety Document referred to in paragraph 2 (1) of Annex II.

(3) Where appropriate, workers who have been so assigned, shall also be drilled in the correct use, handling or operation of that equipment.

Changing rooms.

14. (1) Appropriate changing rooms shall be provided for workers if they have to wear special work clothes and where, for reasons of health or propriety, they cannot be expected to change in another room.

(2) Changing rooms shall be:

(a) easily accessible;

(b) of sufficient capacity ;

(c) provided with seating;

(d) provided with facilities to enable each worker to lock his clothes during working hours; and

(e) provided with facilities to enable wet clothes to be dried.

(3) If circumstances such as dangerous substances, humidity and dirt so require, lockers for work clothes shall be separate from those for ordinary clothes.

Storage space for workers.

(4) Men and women shall have separate changing rooms or separate use of changing rooms.

(5) If changing rooms are not required under paragraph (1), each worker shall be provided with a place to store his clothes.

Showers.

15. (1) Adequate and suitable showers shall be provided for workers if required by the nature of the work or for health reasons.

(2) The shower rooms shall be sufficiently large to permit each worker to wash without hindrance in conditions of an appropriate standard of hygiene.

(3) They shall be equipped with hot and cold running water.

(4) Where showers are not required under paragraph (1), adequate and suitable washbasins with running hot and cold water shall be provided in the vicinity of the workstations and the changing rooms.

(5) Men and women shall have separate shower rooms or separate use of shower rooms or, where the preceding paragraph applies and where so required for reasons of propriety, separate washbasins or separate use of washbasins.

(6) Where the rooms housing the showers or washbasins are separate from the changing rooms, there shall be easy communication between the two.

Lavatory and washbasins.

16. (1) Separate facilities shall be provided in the vicinity of workstations, rest rooms, changing rooms and rooms housing showers or washbasins, with an adequate number of lavatories and washbasins.

(2) Men and women shall have separate lavatories or separate use of lavatories.

First-aid equipment and rooms.

17. (1) First aid equipment shall be appropriate to the type of activity carried out.

(2) One or more first aid rooms shall be provided.

(3) Clearly visible first aid instruction in the event of accidents shall be displayed in these rooms.

(4) They shall be fitted with essential first aid installations, be easily accessible to stretchers and be signposted in accordance with the Work Place (Provision of Heath and, or Safety Signs) Regulations, 2002.

(5) Without prejudice to the above, suitable marked and easily accessible first aid equipment shall be available in all places where working conditions require it.

(6) A sufficient number of workers shall be trained in the use of the first aid equipment provided.

Annex III

Special requirements applicable to the off-shore sector

Consideration of environmental forces.

1. (1) Workplaces shall be designed, constructed, erected, operated, supervised and maintained to withstand the environmental forces anticipated.

(2) They shall have a structure and solidity appropriate to the nature of their use.

Health and Safety Document.

2. (1) Without prejudice to regulation 6, the employer responsible for the workplace covered by this Annex shall ensure that the Health and Safety Document shows that all relevant measures have been taken to protect the safety and health of workers in both normal and critical situations, particularly that:

(a) the special sources of hazard associated with the workplace have been identified, including any concomitant activity which could cause accidents likely to have serious consequences for the health and safety of the workers concerned;

(b) the risks involved in the special sources of hazard referred to paragraph (a) have been assessed;

(c) adequate precautions have been taken to avoid the accidents referred to in paragraph (a), to limit the spread of accidents and to allow efficient and controlled evacuation of the workplace in emergency situations; and

(d) the management system is adequate to comply with the provisions of the Act and of these regulations in both normal and critical situations.

(2) The employer shall observe the procedures and arrangements laid down in the Health and Safety Document during the planning and implementation of all the relevant stages covered by these Regulations.

(3) Different employers who are responsible for different workplaces shall cooperate, where appropriate, in preparing Health and Safety Documents and in measures necessary to ensure the health and safety of workers.

3. (1) Suitable well control equipment shall be provided for use during borehole operations to protect against blowouts. Borehole operations, blowouts.

(2) Deployment of such equipment shall take into account the prevailing well and operational conditions.

4. (1) Appropriate precautions, as identified by the Health and Safety Document, shall be undertaken to protect against, detect and combat the outbreak and spread of fires. Fire detection and Fire-fighting.

(2) Where appropriate, fire walls shall be provided for the purpose of segregating fire risk areas.

5. (1) Adequate fire detection and protection systems, fire-fighting systems and alarms shall be provided at all workplaces in accordance with the risks identified in the Health and Safety Document, including: Fire detection and protection systems.

(a) fire detection systems;

(b) fire alarms;

(c) fire water mains;

(d) fire hydrants and hoses;

(e) water deluge systems and water monitors;

(f) automatic sprinkler systems;

(g) gas extinguishing systems;

(h) foam systems;

(i) portable fire extinguishers;

(j) fireman's equipment.

(2) Non-automatic fire-fighting equipment shall be easily accessible, simple to use and, where necessary, protected from damage.

(3) A fire protection plan detailing the precautions to protect against, detect and combat the outbreak and spread of fires shall be kept at the workplace.

Segregation of emergency systems.

6. (1) Emergency systems shall be segregated or otherwise afforded protection from accidents to the extent necessary to ensure that the emergency functions remain operational in an emergency.

(2) Such systems shall be duplicated where appropriate.

(3) The equipment shall be indicated by long-lasting signs in appropriate points, in accordance with the Work Places (Provision of Health and/or Safety Signs) Regulations, 2002.

Remote control in emergencies.

7. (1) Where required by the Health and Safety Document, a remote control system in the event of an emergency shall be set up.

(2) The system shall incorporate monitoring stations at suitable locations which may be used in the event of an emergency including, if necessary, monitoring stations at safe assembly points and evacuations stations.

(3) Equipment capable of remote control as referred to in paragraph (1) shall at least include systems for ventilation, emergency shutdown of equipment which could give rise to ignition, the prevention of the escape of flammable liquids and gas, fire protection and well control.

General and emergency communications.

8. (1) Where required by the Health and Safety Document, every workplace at which workers are present shall be provided with:

(a) an acoustic and optical system capable of transmitting an alarm to every manned part of the workplace as necessary;

(b) an acoustic system capable of being heard distinctly in all parts of the installation where workers are frequently present;

(c) a system capable of maintaining communication with the shore and rescue services.

(2) Such a system shall be capable of remaining operational in the event of an emergency

(3) The acoustic system shall be supplemented by communication systems which are not reliant on vulnerable power suppliers.

Facilities for raising the alarm.

9. Facilities for raising the alarm shall be installed at suitable locations.

10. When workers are present at workplaces, which are not normally manned, communications systems appropriate to the circumstances shall be provided.

Safe assembly points.

11. (1) Adequate measures shall be taken to protect evacuation points and safe assembly points from heat, smoke and, as far as possible, the effects of explosion, and to ensure that escape routes to and from evacuation points and safe assembly points remain passable.

(2) These measures shall be such as to provide protection to workers for a sufficient period to enable safe evacuation, escape and rescue to be organized and carried out where necessary.

12. Where required by the Health and Safety Document, one of the protected locations specified in the preceding paragraph 11 (1) shall provide appropriate facilities to enable the equipment specified in regulation 7 of this Annex to be remote-controlled and the shore and emergency services to be communicated with.

Access to assembly points from accommodation and work areas.

13. (1) Safe assembly points and evacuation points shall be readily accessible from accommodation and work areas.

(2) For each individual safe assembly point, a list containing the names of workers assigned to that safe assembly point shall be kept up to date and displayed.

(3) A list of persons assigned special duties in the event of an emergency shall be provided and displayed at suitable locations at the workplace.

(4) Their names must be noted in the written instructions referred to in regulation 5, Annex I.

Emergency training for workers.

14. (1) Workers shall be trained in the appropriate actions to be taken in emergencies.

(2) In addition to general emergency training, workers shall receive training specific to the workplace which should be specified in the Health and Safety Document concerning that workplace.

(3) Workers shall also be given suitable training in survival techniques, taking into account the criteria laid down in the Health and Safety Document .

15. Suitable and sufficient means of evacuation in an emergency and means of escape direct to the sea shall be provided at every workplace.

Means of evacuation to be provided at every workplace.

16. (1) An emergency plan for sea rescue and workplace evacuation situations shall be drawn up.

Emergency plan.

(2) The plan, which shall be based on the Health and Safety Document, shall provide for the use of standby vessels and helicopters and include criteria concerning the capacity and response time of standby vessels and helicopters.

(3) The required response time shall be given in the Health and Safety Document for each installation.

(4) Standby vessels shall be designed and equipped to meet evacuation and rescue requirements.

17. All survival craft, life-rafts, life-buoys and life-jackets provided by the employer shall be:

(a) suitable and equipped to maintain life for a sufficient time;

(b) in sufficient number of all the workers likely to be present;

(c) of a type suitable for the workplace;

(d) properly constructed of suitable materials having regard to their life-saving function and the circumstances in which they may be used and kept ready for use; and

(e) of such colour as will make them conspicuous when in use, and equipped with devices such that the user can use them to attract the attention of rescuers.

Requirements for survival craft.

18. Adequate life-saving appliances shall be available for immediate use.

Safety drills.

19. (1) At workplaces at which workers are usually present, safety drills shall be held at regular intervals where:

Life saving appliances.

(a) all workers to whom specific duties have been assigned involving the use, handling or operation of emergency equipment are trained and examined in the execution of such duties, taking

into account the criteria laid down in the Health and Safety Document and, where appropriate, workers shall also be drilled in the correct use, handling or operation of that equipment;

(b) all emergency equipment used in the drill is examined, cleaned and, where appropriate, recharged or replaced and all portable equipment so used is returned to the place where it is ordinarily kept; and

(c) survival craft are verified for operation.

Changing rooms.

20. (1) Appropriate changing rooms shall be provided for workers if they have to wear special work clothes and where, for reasons of health or propriety, they cannot be expected to change in another room.

(2) Changing rooms shall be:

(a) easily accessible

(b) of sufficient capacity

(c) provided with seating

(d) provided with facilities to enable each worker to lock his clothes during working hours

(e) provided with facilities to enable wet clothes to be dried

(3) If circumstances such as dangerous substances, humidity and dirt so require, lockers for work clothes shall be separate from those for ordinary clothes.

(4) Men and women shall have separate changing rooms or separate use of changing rooms.

(5) If changing rooms are not required under paragraph (1), each worker shall be provided with a place to store his clothes.

Lavatories and washbasins.

21. (1) In addition to those facilities provided in any accommodation area, lavatories, washbasins and, if necessary, suitable showers and washing facilities shall be provided in the vicinity of workstations.

(2) Provision shall be made for separate lavatories and, where applicable, showers, or for separate use thereof for men and women.

First Aid rooms.

22. (1) One or more first-aid rooms shall be provided according to the size of the installation and the type of activity being carried out.

(2) The first-aid rooms shall have suitable equipment, facilities and medicines and a sufficient number of specialized workers, as required by the circumstances, for giving first-aid or, where necessary, treatment under the direction of a registered medical practitioner who may or may not be present.

(3) They shall be signposted in accordance with the Work Place (Provision of Health and, or Safety Signs) Regulations.

(4) Suitably signposted and easily accessible first-aid equipment shall also be available in all places where working conditions require it.

Accomodation where necessary.

23. (1) If the nature, scale and duration of operations so require, the employer shall also provide employees with accommodation.

(2) Such accommodation shall:

(a) be suitably protected against the effects of explosion, the infiltration of smoke and gas and the outbreak and spread of fire as identified in the Health and Safety Document;

(b) be suitably equipped with ventilation, heating and lighting facilities;

(c) be provided at each level with at least two independent exits leading to escape routes;

(d) be protected against noise, smells and fumes likely to be hazardous to health from other areas, and against inclement weather;

(e) be separate from any workstation and located away from dangerous areas;

(f) contain sufficient beds or bunks for the number of persons expected to sleep on the installation;

(g) include a sufficient number of showers and washing facilities equipped with hot and cold running water; and

(h) be equipped with a sufficient number of lavatories and washbasins.

(3) Any room designated as sleeping accommodation shall contain adequate space for the occupants to store their clothes.

(4) Separate sleeping rooms, showers and washing facilities and lavatories and washbasins for men and women shall be provided.

(5) The accommodation and its equipment shall be maintained to adequate standards of hygiene.

Helicopter decks.

24. (1) Helicopter decks at workplaces shall be of sufficient size and located so as to provide a clear approach to enable the largest helicopter using the deck to operate under the most severe conditions anticipated for helicopter operations.

(2) The helicopter deck shall be of a design and construction adequate for the intended service.

(3) There shall be provided, and stored in the immediate vicinity of the helicopter landing area, equipment needed for use in the event of an accident involving a helicopter.

(4) On installations with a resident workforce, a sufficient number of emergency response trained personnel for the purpose shall be available on the helicopter deck during helicopter movements.

Positioning of installations at sea.

25. (1) All the necessary measures shall be taken to ensure the health and safety of workers in the mineral-extracting industries through drilling while off-shore installations are being positioned at sea.

(2) Operations in preparation for the positioning of off-shore installations shall be carried out in such a way as to ensure their stability and safety.

(3) Equipment used and procedures followed for the activities referred to in paragraph 25(1) shall be such as to reduce any risk to workers in the mineral-extracting industries through drilling, having regard to both normal and critical conditions.

Annex IV

Special requirements applicable to surface and underground mineral-extracting industries and to ancillary surface installations

Prohibition of smoking.

1. (1) Smoking is forbidden in areas subject to particular fire or explosion hazards.

(2) The use of any open flame and the execution of any work that may give rise to an ignition hazard is prohibited, unless adequate safety precautions are taken to prevent the occurrence of fires or explosions.

Prevention of fires, fire-fighting equipment.

2. (1) Wherever workplaces are designed, constructed, equipped, commissioned, operated or maintained, adequate measures shall be taken to prevent fires from starting and spreading from the sources identified in the Health and Safety Document.

(2) The employer shall ensure that provision is made for fast and effective fire-fighting.

(3) Workplaces shall be equipped with appropriate fire-fighting equipment and, as necessary, with fire detectors and alarm systems.

(4) Non-automatic fire-fighting equipment shall be easily accessible and simple to use and, where necessary, protected from damage.

(5) A fire protection plan detailing the precautions to be taken, in accordance with regulations 5 to 11, to protect against, detect and combat the outbreak and spread of fires shall be kept on site.

Fire-fighting equipment.

3. (1) The fire-fighting equipment shall be indicated by long-lasting signs in appropriate places, in accordance with the Work Place (Provision of Health and/or Safety Signs) Regulations, 2002.

Explosives. Cap. 33.

4. (1) Without prejudice to the Explosives Ordinance, operations involving the storage, transport and use of explosives and initiating devices shall be carried out by duly authorized and competent persons.

(2) Such operations shall be organized and performed in such a way that there is no risk to workers.

(3) The employer shall ensure that:

(a) suitable and sufficient rules are made which lay down in writing procedures for:

i. shotfiring operations at the quarry;

ii. appointing shotfirers, trainee shotfirers and storekeepers;

iii. authorising other persons who will be involved with the storage, transport or use of explosives;

iv. dealing with misfires; and

v. ensuring, so far as is reasonably practicable, that such rules are complied with.

(b) an adequate written specification is prepared for each shotfiring operation to ensure, so far as is reasonable practicable, that when such firing occurs it will not give rise to danger;

(c) a copy of the specification referred to in paragraph (b) is given to any person upon whom it imposes duties;

(d) such facilities and equipment as are necessary to enable shotfiring operations to be carried out safely are provided;

(e) any vehicle which is provided for use in relation to shotfiring operations is so marked as to be readily identifiable from a distance;

(f) detonators are stored in separate containers from other explosives;

(g) explosives are kept at all times either in a locked explosives store or under the constant supervision of a suitable person;

(h) each shotfiring operation is carried out safely and in accordance with the rules and specifications specified in paragraphs (a) and (b) thereof respectively.

(4) Before a shot is fired, the shotfirer shall:

(a) check the shotfiring system or circuit to ensure that it has been connected correctly;

(b) where electrical detonators are used, ensure that they have been correctly connected to the shotfiring system or circuit and that the shotfiring system or circuit is tested with an instrument suitable for the purpose from a position of safety;

(c) where appropriate, ensure that the electrical integrity of the shotfiring system or circuit is such as to make a misfire unlikely; and

(d) ensure that the shot is fired from a safe place.

Limitation on persons handling explosives.

5. (1) No person other than a person engaged in the transport of explosives to or from the workplace, a shotfirer, a person authorised to handle explosives at the workplace or a person appointed to be in charge of the explosives store shall handle explosives.

(2) No person shall bring any substance or article, other than explosives, likely to cause an unintended explosion or fire within 10 metres of any explosives or, except for the purpose of lighting igniter cord or safety fuse, take any naked flame within 10 metres of any explosives.

(3) No person shall forcible remove any detonator lead, safety fuse or other system for initiating shots from a shothole after the shothole has been charged and primed.

(4) No person shall charge or fire a shot:

(a) unless there is sufficient visibility to ensure that work preparatory to shotfiring, the shotfiring operation and any site inspection after the shot is fired can be carried out safely;

(b) in a shothole which has been previously been fired, unless he is dealing with a misfire in accordance with action taken under regulation 6 (b) below; or

(c) in any tunnel or other excavation in the face or side of the quarry for the purpose of extracting minerals or products of minerals.

6. (1) The employer shall ensure that a suitable and sufficient appraisal of all proposed or existing excavations is undertaken by a competent person in order to determine whether any such excavation is a significant hazard. Appraisal of proposed or existing excavations.

(2) The operator shall ensure that:

(a) any significant findings made during an appraisal, any conclusions reached in accordance with subregulation (1) and the reasons for those conclusions are recorded by the competent person undertaking the appraisal;

(b) the said competent person signs and dates any such record; and

(c) the record made in accordance with paragraph (a) is made available to each employer of persons at work at the workplace and to all workers.

(3) Where the conclusion reached by the competent person following an appraisal made pursuant to subregulation (1) is that the excavation presents no significant hazard, the employer shall ensure that a competent person carries out further such appraisals: Appraisal of proposed or existing excavations.

(a) at appropriate intervals;

(b) whenever there is any reason to suspect that there has been or will be a significant change to:

i. the matters to which the appraisal relates; or

ii. any neighbouring land which may be affected by movement by or instability of the excavation to which the appraisal relates; and

iii. whenever there is any reason to doubt the validity of the conclusion of the current appraisal.

(4) Where the conclusion reached by the competent person following an appraisal made pursuant to subregulation (1) is that the excavation represents a significant hazard, the operator shall ensure that a geotechnical assessment is carried out in accordance with the requirements of the next regulation as soon as is reasonably practicable.

7. (1) For the purposes of these regulations, a "geotechnical assessment" means an assessment carried out by a geotechnical specialist

identifying and assessing all factors liable to affect the stability and safety of a proposed or existing excavation and shall include:

(a) preparation by or under the supervision of the said geotechnical specialist or, as appropriate, consideration by the said geotechnical specialist of the documents and particulars specified at Schedule 1;

(b) the conclusion of the said geotechnical specialist as to the safety and stability of the proposed or existing excavation being assessed, including his conclusions as to whether the said excavation represents a significant hazard by way of instability or movement;

(c) where appropriate, the conclusion of the said geotechnical specialist as to whether any remedial work is required in relation to the excavation being assessed and the date by which such work should be completed.

(d) where appropriate, the conclusion of the said geotechnical specialist as to the date by which the next geotechnical assessment should take place.

(2) The employer shall ensure that:

(a) any significant findings made during a geotechnical assessment and any conclusions reached in accordance with paragraphs (1)(b), (c) or (d) and the reasons for those conclusions are recorded by the geotechnical specialist undertaking the assessment; and

(b) the said geotechnical specialist signs and dates any such record and records his professional qualifications thereon.

(3) The employer shall ensure that any information available to him which may be relevant for the purposes of a geotechnical assessment is made available to the geotechnical specialist undertaking that assessment.

(4) The operator shall ensure that any remedial works identified during the geotechnical assessment in accordance with paragraph (1)(c) are undertaken by the date specified.

Excavation representing a significant hazard.

8. (1) Where the conclusion recorded by a geotechnical specialist following a geotechnical assessment of a proposed or existing excavation is that the excavation represents a significant hazard by

way of instability or movement, the employer shall ensure, subject to sub-paragraph (1)(d) of the preceding regulation, that the said excavation is subject to a further geotechnical assessment at least every two years.

(2) Without prejudice to subregulation (1), where, in relation to an excavation which falls within subregulation (1) there is any reason:

(a) to suspect that there has been or will be a significant change to:

i. the matters to which the geotechnical assessment relates; or

ii. any neighbouring land which may be affected by movement by or instability of the excavation ; or

(b) to doubt the validity of the conclusion of the current assessment, the employer shall ensure that a further geotechnical assessment is undertaken as soon as is reasonably practicable.

Excavation not representing any hazard.

9. Where the conclusion reached by a geotechnical specialist following a geotechnical assessment of a proposed or existing excavation is that it presents no significant hazard, the operator shall ensure that:

(a) the said geotechnical specialist specifies the frequency with which appraisals pursuant to the preceding regulation 6 are to be conducted in order to ensure the continued safety and stability of the excavation ; and

(b) a record of that specification is made.

Action taken in case of misfires.

10. In the event of a misfire, the employer shall consult the competent persons referred to in regulation 4 (1) of this Annex and shall ensure, so far is reasonably practicable, that:

(a) access to the danger area as is strictly necessary;

(b) appropriate steps are taken to determine the cause of and to deal with the misfire; and

(c) a suitable record is kept of the misfire

Emergency training for workers.

11. (1) Workers shall be trained in the appropriate actions to be taken in emergencies.

(2) Rescue equipment shall be provided at readily accessible and appropriately sited places and kept ready for use and shall be indicated by signs in accordance with the Work Place (Provision of Health and∕or Safety Signs) Regulations, 2002.

Safety drills.

12. (1) Safety drills shall be held at regular intervals at all workplaces at which workers are usually present.

(2) These shall be directed towards the training and checking of the skills of workers to whom specific duties have been assigned in the event of emergency involving the use, handling or operation of emergency equipment, taking into account the criteria laid down in the Health and Safety Document.

(3) Where appropriate, workers who have been so assigned, shall also be drilled in the correct use, handling or operation of that equipment.

First aid equipment

13. (1) First aid equipment shall be available in all places where working conditions require it and must be appropriate to the operation.

(2) This equipment must be indicated by suitable signs and easily accessible.

First aid rooms.

14. One or more first aid rooms, wherein clearly visible first-aid instruction in the event of accidents shall be displayed, shall be provided where the size of the premises, type of activity being carried out and frequency of accidents so dictate.

15. (1) First-aid rooms shall be fitted with essential first-aid installations and equipment and be easily accessible to stretchers.

(2) They shall be signposted in accordance with the Work Place (Provision of Health and∕or Safety Signs) Regulations, 2002.

Availability of first aid equipment elsewhere.

16. (1) In addition to the above, first aid equipment shall be available in all places where working conditions require it.

(2) This equipment shall be suitably marked and easily accessible.

First aid training for workers.

17. A sufficient number of workers shall be trained in the use of the first-aid equipment provided.

Changing rooms.

18. (1) Appropriate changing rooms shall be provided for workers if they have to wear special work clothes and where, for reasons

of health or propriety, they cannot be expected to change in another room.

(2) Changing rooms shall be:

(a) easily accessible

(b) of sufficient capacity

(c) provided with seating

(d) provided with facilities to enable each worker to lock his clothes during working hours

(e) provided with facilities to enable wet clothes to be dried

(3) If circumstances such as dangerous substances, humidity and dirt so require, lockers for work clothes shall be separate from those for ordinary clothes.

(4) Men and women shall have separate changing rooms or separate use of changing rooms.

(5) If changing rooms are not required under subregulation (1), each worker shall be provided with a place to store his clothes.

Showers.

19. (1) Adequate and suitable showers shall be provided for workers if required by the nature of the work or for health reasons.

(2) The shower rooms shall be sufficiently large to permit each worker to wash without hindrance in conditions of an appropriate standard of hygiene.

(3) They shall be equipped with hot and cold running water.

(4) Where showers are not required under subregulation (1), adequate and suitable washbasins with running hot and cold water shall be provided in the vicinity of the workstations and the changing rooms.

(5) Men and women shall have separate shower rooms or separate use of shower rooms or, where the preceding paragraph applies and where so required for reasons of propriety, separate washbasins or separate use of washbasins.

Lavatories and washbasins.

20. (1) Separate facilities shall be provided in the vicinity of workstations, rest rooms, changing rooms and rooms housing showers or washbasins, with an adequate number of lavatories and washbasins.

(2) Men and women shall have separate lavatories or separate use of lavatories.

Overburden dumps, spoil heaps and other tips.

21. Overburden dumps, spoil heaps and other tips, as well as settling lagoons, shall be designed, constructed, operated and maintained in such a way as to ensure their stability, as well as the health and safety of workers.

Benches and haul roads.

22. The employer shall ensure that

(a) benches and haul roads are designed, constructed and maintained so as to allow vehicles and plant to be used and moved upon them safely;

(b) effective precautions are taken, by the installation of barriers or otherwise, to prevent vehicles or plant accidentally leaving any bench or haul road; and

(c) a barrier suitable for the purpose of discouraging trespass is places around the boundary of the quarry and is properly maintained.

Annex V

Special requirements applicable to Surface Mineral-extracting Industries

The Health and Safety Document.

1. (1) Work shall be planned taking into account the elements of the Health and Safety Document which concern the risks of falls or slips of ground.

(2) The height and slope of overburden-stripping and extraction faces shall be appropriate to the nature and stability of the ground and the methods of working.

Stability of benches and haul roads.

2. (1) Benches and haul roads shall be stable enough for the plant used.

(2) They must be constructed and maintained in such a way that the plant can be moved safely.

Checking for loose ground or rocks, scaling.

3. (1) Before the start or restart of work, stripping and extraction faces above work areas or haul roads shall be checked for loose ground or rocks.

(2) Scaling shall be carried out where necessary.

Prevention of instability in faces and tips.

4. Faces and tips shall not be worked in such a way that instability is created.

Annex VI

Special requirements applicable to Underground Mineral-extracting Industries

The Health and Safety Document.

1. (1) Without prejudice to regulation 6, the employer responsible for the workplace covered by this Annex shall ensure that the Health and Safety Document shows that all relevant measures have been taken to protect the health and safety of all workers in normal and critical situations.

(2) The Health and Safety Document shall be brought up to date regularly and be available for inspection at the workplace.

(3) The employer shall ensure that all work is carried our in accordance with the Health and Safety Document.

Plans of underground workings.

2. (1) The employer shall prepare plans of underground workings, drawn to a scale which provides a clear representation and which:

(a) show roadways and winning areas;

(b) show known features which may influence working safety;

(c) shall be readily accessible; and

(d) shall be kept for as long as is necessary for safety purposes.

(2) Plans of underground workings shall be brought up to date periodically and held available at the workplace.

Outlets.

3. (1) All underground workings shall have access to the surface by means of at least two separate outlets which are soundly constructed and readily accessible to underground workers.

(2) Mechanical manwinding or manriding facilities shall be available for these outlets if considerable physical effort is involved in negotiating them.

4. Workings where underground work is carried out shall be constructed, operated, equipped and maintained so that workers can work and move in them with a minimum of risk.

5. Roadways shall be signposted to help workers to find their way about the workings.

6. Transport facilities shall be installed, operated and maintained in such a way as to ensure the health and safety of drivers, users and other persons in the vicinity. Transport facilities.

7. Mechanical manwinding or manriding facilities must be properly installed and used in accordance with written instructions. Mechanical manwinding or manriding facilities.

8. (1) Support shall be provided as soon as possible after excavation, except where the stability of the ground makes it unnecessary for the safety of workers. Provision of support after excavation.

(2) It shall be installed in accordance with plans and written instructions

9. Workings accessible to workers shall be inspected regularly for ground stability and all support shall be maintained accordingly.

10. (1) All underground workings to which access is permitted shall be ventilated in an appropriate manner. Adequate ventilation.

(2) Continuous ventilation shall be provided to maintain:

(a) a healthy atmosphere;

(b) an atmosphere in which the risks of explosion and respirable dust are kept under control;

(c) an atmosphere in which working conditions are adequate while work is in progress, having regards to the working methods being used and the physical demands placed on the workers.

11. (1) Where the requirements of the preceding point cannot be met by natural ventilation, the main ventilation shall be provided by means of one or more mechanical fans. Mechanical ventilation.

(2) The employer shall take the necessary steps to ensure stable and continuous ventilation.

(3) The depression of the main fans shall be monitored continuously with an automatic alarm indicating unscheduled stoppages.

12. (1) The ventilation parameters shall be measured and recorded periodically.

(2) A ventilation plan containing the relevant details of the ventilation system shall be prepared, brought up to date periodically and held available at the workplace.

Gassy mines.

13. (1) An underground working shall be deemed to be gassy if firedamp is likely to be released in such a quantity that the risk of formation of an explosive atmosphere cannot be excluded.

(2) The main ventilation shall be provided by one or more mechanical fans.

Elimination of risks from firedamp emission.

14. (1) Notwithstanding that working must proceed taking into account firedamp emission, the employer shall take all the steps necessary to eliminate as far as possible the risks arising from firedamp.

(2) The ventilation measurement referred to in the preceding regulation 12 shall be supplemented by firedamp determinations.

(3) Where required by the Health and Safety Document, firedamp levels shall also be continuously monitored in return airways from production units using mechanized extraction or underwinning and at the head ends of mechanized blind end workings.

Auxiliary ventilation systems.

15. (1) Auxiliary ventilation shall be limited to development and salvage work and to places with a direct connection to the main ventilation current.

(2) Production workings may be ventilated by auxiliary systems only if the employer takes all the appropriate additional measures to ensure the health and safety of workers.

(3) Any measures taken under the preceding paragraph shall be included in the Health and Safety Document.

Limitation on use of explosives for gassy mines.

16. Only explosives and initiating devices intended specifically for gassy mines shall be used.

Prohibition on smoking, etc.

17. (1) Smoking, carrying tobacco for smoking and any objects which may be used to produce a flame are prohibited.

(2) Flame cutting, welding and other similar operations are permitted only in exceptional circumstances and subject to the introduction by the employer of specific measures ensuring the health and safety of the workers.

(3) Any measures taken under the preceding paragraph shall be included in the Health and Safety Document.

Mines containing flammable dusts.

18. (1) Coal mines shall be deemed to be susceptible to flammable dusts, except in cases where the Health and Safety Document shows that none of the seams being worked contains dust liable to propagate an explosion.

(2) In mines with flammable dusts regulations 16 and 17 of this Annex shall apply mutatis mutandis.

19. (1) The employer shall take the necessary steps to reduce flammable dust deposits and to remove, neutralise or bind the same.

(2) The measures taken in accordance with the preceding paragraph shall be included in the Health and Safety Document.

20. (1) The employer shall install a system of explosion barriers to limit the propagation of flammable dust and/or firedamp explosions which are liable to trigger further flammable dust explosions.

(2) The locations of the abovementioned explosion barriers shall be located in the Health and Safety Document.

Gas outbursts. rockbursts and water inrushes.

21. In zones susceptible to gas outbursts with or without the projection of minerals or rock, rockbursts or water inrushes, the employer shall draw up and implement an operating plan to ensure, as far as possible, a safe system of work and the protection of workers.

Identification of risk zones.

22. (1) The employer shall take all necessary measures to identify risk zones, protect workers in workings approaching or traversing these zones, and control the risks.

(2) The measures taken in accordance with the preceding paragraph shall be included in the Health and Safety Document.

Fires, combustion and heatings.

23. The employer shall ensure the prevention and, where appropriate, early detection of spontaneous combustion.

Limitation on quantities of flammable materials underground.

24. Flammable materials taken into underground workings shall be limited to the quantities which are strictly necessary.

Hydraulic fluids.

25. (1) In cases where it is necessary to use hydraulic fluids, fluids which are difficult to ignite shall, as far as possible, be used in order to avoid the risk of fire and its spread.

(2) The hydraulic fluids shall satisfy specifications and test conditions relating to fire resistance and hygiene criteria.

(3) Where hydraulic fluids not satisfying the specifications, criteria and conditions referred to in the preceding paragraph are used, additional precautions to avoid the increased risk of fire and its spread shall be used.

26. (1) Workers shall, where necessary, be provided with self-rescue respiratory protection devices to enable their withdrawal in safety.

(2) The workers shall always keep these devices within their reach.

(3) The employer shall provide the workers with training in the use of these devices.

27. Workers shall be provided with a suitable personal lamp.

Artificial lighting at workplaces.

28. Workstations shall, as far as possible, be equipped with artificial lighting adequate for the protection of the health and safety of workers.

29. Lighting installations shall be placed in such a way that there is no risk of accident to workers as a result of the type of lighting fitted.

Knowledge of position of workers.

30. (1) The employer shall introduce measures to ensure that it is possible to know exactly who is underground at any time.

(2) Any such measure shall be included in the Health and Safety Document.

Establishment of adequate rescue organization.

31. (1) The employer shall establish an adequate rescue organization to enable suitable action to be taken rapidly and effectively in the event of a major accident.

(2) The rescue organization shall have a sufficient number of trained workers and adequate rescue equipment at its disposal to enable it to act at any site where underground extraction or exploratory workings are in progress.

Sanitary installations.

32. Sanitary installations may be located on the surface.

Schedule I

Content of Geotechnical Assessments

Site survey

1. An accurate plan which should be prepared on a scale not less detailed than 1: 2500 showing -

(a) the boundaries of the quarry or premises upon which the excavation or proposed excavation is or is to be situated;

(b) the site of the excavation or proposed excavation;

(c) any contiguous land or structures which might be affected by the excavation or proposed excavation; and

(d) all mine workings (whether abandoned or not), buried quarry workings, known cave systems, active or former landslips, springs, artesian wells, watercourses and other natural or man-made features including tunnel pipes or culverts which might affect the safety of the excavation or proposed excavation or which might be relevant for the purpose of determining whether excavation ping operations can be carried out safely.

Site investigation

2. A record of all relevant site investigation information including surveys, tests, boreholes and groundwater measurements made for the purpose of the geotechnical assessment together with the results of any testing including the strength of materials within and beneath the tip or within the excavated slope. The record shall include any known historical information relevant to the site investigation.

Cross-sections based on site investigation

3. Sufficient accurate cross-sections on a scale not less detailed than 1:1250 of the site of the excavation or proposed excavation showing the existing ground surface and all relevant superficial materials and bedrock underlying the said site and -

(a) any variation in the thickness, level or character of the superficial deposits and bedrock materials based on the site investigation; and

(b) the position of any surface whether natural or manmade which may affect the safety of the excavation or proposed excavation.

Plans based on site investigation

4. Plans showing the position of all boreholes, wells and trial pits used in the site investigation and the location and levels of all materials and surfaces which may affect the safety of the excavation or proposed excavation.

Assumptions made before analysis

5. A record of any assumptions relevant to the assessment of ground conditions relating to the safety of the excavation made by the geotechnical specialist including a record of any relevant information which was not available when undertaking the assessment.

Findings of analysis

6. A record of the calculations carried out in order to determine the safety of the excavation, including any variables or parameters used in those calculations and the reasons for using them and the findings of those calculations expressed as the factor of safety or the probability of failure or other recognised basis of assessing stability.

Design coming out of analysis

7. An accurate plan on a scale not less detailed than 1:2500 recording, in relation to excavations or proposed excavations, the design of the excavation, including the height or proposed height of the slope, the position and width of any benches and representative contours of the excavation at vertical intervals of not more than 5 metres.

Requirements during and after construction

8. A record of the nature and extent of inspection, supervision and safety measures necessary to ensure the safety of the excavation and a specification of necessary engineering works and safety measures. A record of the action to be taken regarding defects specified in the report.

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