

STATUTORY INSTRUMENTS

S.I. No. XX of 201X

SAFETY, HEALTH AND WELFARE AT WORK (QUARRIES) REGULATIONS 201X

SAFETY, HEALTH AND WELFARE AT WORK (QUARRIES) REGULATIONS 201X

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SAFETY, HEALTH AND WELFARE AT WORK (QUARRIES) REGULATIONS 201X

I, ....., Minister for Jobs, Enterprise, and Innovation, in exercise of the powers conferred on me by section 58 of the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005), (as adapted by the Enterprise, Trade and Innovation (Alteration of Name of Department and Title of Minister) Order 2011 (S.I. No. 245 of 2011)), and for the purpose of giving effect to Council Directive 92/104/EEC of 3 December 1992 , after consultation with the Health and Safety Authority, hereby make the following Regulations:

**PART 1**

Preliminary and General

*Citation and commencement.*

1. These Regulations may be cited as the Safety, Health and Welfare at Work (Quarries) Regulations 2014 and shall come into operation on XX XXX 2014.

2. (1) In these Regulations—

“Act of 2005” means the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);

“appoint”, in relation to a person, means appoint in writing with a written statement summarising his or her responsibilities and duties;

“blast specification” means a blast specification prepared under Regulation 46;

“construction site” means any site at which construction work in relation to a project is carried out as defined by Regulation 2(1) of the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013);

“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 a quarry where minerals are being or have been extracted and includes the ground, faces or sides of that place and any other incline;

“exploder” means a device designed for firing detonators;

“explosive” means an explosive within the meaning of section 2 of the Act of 1875 and orders made or to be made under section 104 thereof and includes any explosive article or explosive substance which would—

(a) if packaged for transport, be classified in accordance with the UN recommendations as falling within Class 1, or

(b) be so classified in accordance with the United Nations recommendations as –

- (i) being unduly sensitive or so reactive as to be subject to spontaneous reaction and accordingly too dangerous to transport, and
- (ii) falling within Class 1 as in subparagraph (a),

but does not include an explosive substance produced as part of a manufacturing process which later reprocesses it to produce a substance which is not an explosive substance;

“explosive substance” means a solid or liquid substance (or a mixture of those substances) that is, by itself, capable by chemical reaction of producing gas at such temperature, pressure and speed as could cause damage to its surroundings;

“explosives store” means any of the following:

- (a) a magazine licensed under sections 6 to 8 of the Explosives Act 1875,
- (b) a store licensed under section 15 of that Act,
- (c) premises registered in accordance with section 21 of that Act;

“explosives supervisor” means a person appointed under Regulation 43 to organise and supervise all work involving explosives;

“FETAC” means the Further Education and Training Awards Council established under section 12 of the Qualifications (Education and Training) Act 1999 (No. 26 of 1999);

“geotechnical specialist” means a professional engineer or professional geologist competent to carry out a geotechnical assessment under Part 6;

“inspection” means such visual or more rigorous inspection by a competent person as is appropriate for the purpose.

“lagoon” means any natural or artificial pond (including any water-filled excavation) used in connection with quarrying operations and includes—

- (a) such a pond that treats waste water utilising sunlight, bacterial action and oxygen to purify that water, and
- (b) a place at a quarry where waste water, sludge and liquid waste accumulate or are stored;

“minerals” means any natural deposit, including stone, slate, clay, gravel and sand, and includes products of minerals, but does not include petroleum within the meaning of Part II of the Petroleum and Other Minerals Development Act 1960 (No. 7 of 1960) or peat;

“misfire” means an occurrence in relation to the firing of shots where—

- (a) ) testing before firing reveals broken continuity that cannot be rectified, or
- (b) a shot or any part of a shot fails to explode when an attempt is made to fire it;

“operator”, in relation to a quarry, means an employer or other person who has been appointed under Regulation 5 by a quarry owner;

“Permanent cessation of quarrying operations” means that the extraction of minerals will not recommence at a later date and that all work relating and incidental to that cessation has been completed;

“preparation for sale” includes the crushing, screening, washing, drying and bagging of minerals;

“Principal Regulations” means the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;

“prospecting” means the activity of searching for minerals or mineral deposits;

“public road” means a road over which a public right of way exists and the responsibility for the maintenance of which lies on a local authority within the meaning of the Local Government Act 2001 (No. 37 of 2001);

“quarry” has the meaning given to it by Regulation 3 and is an extractive industry within the meaning of Regulation 4(c) of the Principal Regulations;

“quarry manager” means an individual appointed under Regulation 9 to manage the operation of a quarry;

“Quarrying operations” means work activities associated with the extraction, storage and preparation for sale of minerals at the quarry and includes:

- stripping of overburden,
- any activities relating to excavations, tips and lagoons’
- drilling and shotfiring operations
- crushing, screening, sizing,
- loading and hauling, and

any related activities;

“quarry owner” means the owner of a quarry, or part of a quarry;

“registration card” means a quarries skills registration card issued pursuant to paragraph (3) and Schedule 1 of the Quarries Skills Certification Scheme;

“shot” means a single shot or a series of shots fired as part of one blast;

“shotfirer” means a person appointed under Regulation 43 to be responsible for shotfiring operations;

“shotfiring operations” includes any of the following:

- (a) checking to ensure that the blast specification is still appropriate for the site conditions at the time the blasting is to take place,
- (b) checking the geometry of shotholes,
- (c) mixing explosives,
- (d) priming a cartridge,
- (e) charging and stemming a shothole,
- (f) linking or connecting a series of shots,
- (g) withdrawal and sheltering of persons,
- (h) inspecting and testing a shotfiring circuit,
- (i) firing a shot,
- (j) checking for misfires,
- (k) destroying explosives;

“shotfiring rules” means rules made under Regulation 45;

“SOLAS” means An tSeirbhís Oideachais Leanúnaigh agus Scileanna as established by the Further Education and Training Act 2013 (No. 25 of 2013);

“storekeeper” means a person appointed under Regulation 43 to be responsible for the safe operation of an explosives store;

“temporary cessation of quarrying operations” means extraction of minerals will cease for a period expected to exceed six calendar months from the date of notification to the Authority with an intention to recommence quarrying operations at some later date;

“tip” means an accumulation or deposit of minerals used in connection with quarrying operations and includes—

- (a) overburden dumps, backfills, spoil heaps, stock piles and any wall or structure that retains or confines a tip, and
- (b) ) a tip that had been used during previous quarrying or mining operations and from which minerals are being extracted for further use or for sale;

“trainee shotfirer” means a person appointed under Regulation 43 for the purpose of undergoing training in shotfiring operations under the close personal supervision of a shotfirer;

“vehicle and traffic rules” means rules made under Regulation 22;

“workstation” means any location at a quarry where work or work-related activities are undertaken.

(2) Where, under these Regulations, a person is required to make instructions, rules, operating procedures or schemes, such instructions, rules, operating procedures or schemes, as the case may be, shall be set out in writing and reasonable in the context of duty that the person is required to carry out.

(3) Taking account of the European Communities (Recognition of Qualifications and Experience) Regulations 2003 (S.I. No. 372 of 2003) and in compliance with Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications<sup>1</sup>, SOLAS shall issue registration cards (with photographic identification) pursuant to Schedule 1 and maintain a register of the cards issued.

*Meaning of “quarry”.*

3. (1) In these Regulations “quarry” means, subject to paragraph (2), an excavation or system of excavations for the purpose of, or in connection with, the surface extraction of, or prospecting for, minerals and includes any of the following:

- (a) so much of the area (including works thereon and ancillary surface installations such as buildings and other premises and structures providing accommodation, rest and sanitary

<sup>1</sup>OJ L255, 30.9.2005, p.22.

facilities) adjacent to or surrounding quarrying operations as is occupied for the purpose of, or used in connection with—

- (i) those operations,
  - (ii) the storage or preparation for sale of the minerals extracted from the quarry, or
  - (iii) the removal from the quarry of any substance extracted from the quarry;
- (b) a tip;
- (c) a lagoon;
- (d) a reclamation site—
- (i) from which materials are being extracted for further use or for sale, and
  - (ii) where that extraction forms part of the process whereby that site is restored for agricultural, industrial, leisure or domestic use;
- (e) any road within the quarry, other than a public road, used in connection with the extraction and preparation for sale of minerals from the quarry;
- (f) any conveyor, pipeline or means of conveyance of minerals or waste materials to a preparation area, tip, stockpile or lagoon
- (g) a railway line or siding at the quarry.

(2) Notwithstanding paragraph (1), “quarry” does not include any of the following:

- (a) a mine within the meaning of Regulation 3 of the Safety, Health and Welfare at Work (Mines) Regulations, 2014 (S.I. xx of 2014);
- (b) extraction of minerals through drilling by boreholes and prospecting with a view to such extraction;
- (c) the excavation of minerals within the identified boundary of a construction site where the mineral extracted is used exclusively within that site;
- (d) a public road;
- (e) an area of a quarry at which any manufacturing process of the minerals is carried out;
- (f) an area of a quarry that is being used exclusively for a work activity unconnected with the extraction of minerals, or the preparation for sale of minerals.

4. (1) Subject to paragraph (2), these Regulations apply to all quarries.

(2) These Regulations do not apply to a quarry in relation to which—

- (a) notice of permanent or temporary cessation of quarrying operations has been given to the Authority in accordance with Regulation 7, and
- (b) all work relating and incidental to that cessation has been completed, including work for the purpose of preventing the escape from that quarry of water or other substance that flows when wet.

(3) The relevant statutory provisions apply to all quarries, without prejudice to more stringent or specific provisions contained in these Regulations.

## PART 2

### Safety and Health Management

#### *Appointment of operator.*

5. (1) Before the commencement of operations at a quarry, or part of a quarry—
  - (a) the quarry owner shall appoint a competent person who has sufficient resources to be the operator of the quarry, or part of the quarry, as the case may be, or
  - (b) where the quarry owner is competent and has sufficient resources to do so, he or she may appoint himself or herself as operator of the quarry, or part of the quarryand shall make a record of the appointment.
  - (2) Where the quarry owner under paragraph (1) (a) appoints another person to be the operator of the quarry, or part of the quarry, both parties shall sign the record and the quarry owner shall provide a copy of the signed record to the operator.
  - (3) The original record and a signed copy of it shall be kept by the quarry owner and the operator, respectively, for a period of 5 years from the termination of the operator's appointment as operator of the quarry, or part of the quarry.
  - (4) The quarry owner shall provide the operator with any relevant information available to him or her, which might affect the safety, health and welfare of persons at work at the quarry.
  - (5) Where the quarry owner appoints different operators for different parts of his or her quarry, he or she shall—
    - (a) appoint one of them to be the common operator for the purposes of Regulation 11, and
    - (b) demarcate the different parts of the quarry.

#### *Operator to be appointed before commencement of quarrying operations.*

6. No person shall be deployed to carry out quarrying operations at a quarry unless an operator has been appointed under Regulation 5.

#### *Notification to Authority.*

7. (1) The operator shall ensure that written notice in an approved form is given to the Authority not later than 14 days following the occurrence of any of the following events in respect of the quarry:
  - (a) his or her appointment as operator;
  - (b) the commencement of quarrying operations;
  - (c) the permanent or temporary cessation of quarrying operations.
- (2) The quarry owner shall, not later than 14 days after the appointment of a common operator under Regulation 5(5), give written notice of that appointment in an approved form to the Authority

#### *General duties of operator.*

8. (1) The operator shall, so far as is reasonably practicable, ensure that—
  - (a) the quarry and any machinery, tool or other article used at work there are, as appropriate, selected, designed, constructed, installed, equipped, commissioned, protected, operated and maintained in such a way that persons at work can perform the work assigned to them without endangering the safety, health and welfare of themselves or others,

- (b) if any of the articles referred to in subparagraph (a) is located in an area of the quarry within which risk of fire or explosion from ignition of gas, vapour or volatile liquid exists, or is likely to exist, that article is—
    - (i) suitable for use in that particular area, and
    - (ii) if necessary, fitted with suitable protective devices and fail-safe systems,
  - (c) mechanical equipment and plant at the quarry is of adequate strength and free from patent defect and suitable for the purpose for which it is intended, and
  - (d) electrical equipment and plant at the quarry is of sufficient capacity for the purpose for which it is intended.
- (2) The operator shall ensure, as regards that quarry, that—
- (a) work is planned taking into account the elements of the safety statement that concern the risks of falls, movements or slips of ground and, in particular, that—
    - (i) the height and slope of overburden stripping and extraction faces is appropriate to the nature and stability of the ground and the methods of working,
    - (ii) benches and haul roads are stable enough for the plant used and are constructed and maintained in such a way that plant can be moved safely,
    - (iii) before the start or restart of work, stripping and extraction faces above work areas or haul roads are checked for loose ground or rocks and scaling is carried out where necessary, and
    - (iv) faces and tips are not worked in such a way that instability is created,
  - (b) it is organised so as—
    - (i) to provide adequate protection against hazards,
    - (ii) to be kept in good order, with any hazardous substances or deposits removed, and
  - (c) workstations are designed and constructed according to ergonomic principles taking into account the need for persons at work to carry out their work safely and without risk to health at their workstations,
  - (d) a sufficient number of persons with the requisite competence to perform the tasks assigned to them are present,
  - (e) where a workstation is occupied by a person on his or her own, the necessary supervision or means of communication is provided, and
  - (f) in the event of the permanent cessation of quarrying operations there, the quarry is left, so far as is reasonably practicable, in a safe condition.

*Management structure.*

9. (1) The operator shall establish a management structure that includes the appointment of—

- (a) a competent individual as quarry manager to—
  - (i) manage the operation of the quarry at all times when persons are working in the quarry, provided that where the operator is an individual and is competent he or she may appoint himself or herself,
  - (ii) advise the operator as to the observance of the requirements of the relevant statutory provisions, and
  - (iii) exercise a general supervision of the observance of those requirements and the promotion of the safe conduct of work generally,
- (b) persons appointed under Regulation 43, and
- (c) an adequate number of competent persons—

- (i) to enable the quarry to be operated and managed safely and in accordance with the safety statement,
  - (ii) to supervise persons engaged in work activities at the quarry involving serious risk to safety and health as identified in the safety statement, and
  - (iii) to visit occupied workstations at the quarry at least once during each shift, where this is specified as necessary under the safety statement.
- (2) The operator shall ensure that the management structure is reviewed regularly and revised where necessary and, in particular, if the quarry undergoes significant changes (including natural changes), extensions or conversions.
- (3) The operator shall ensure that each person who forms part of the management structure is provided with a copy of those parts of the safety statement that describe that person's authority and duties.

*Safety statement.*

10. (1) The operator shall ensure that the safety statement, prepared in compliance with section 20 of the Act of 2005, includes details of the—
- (a) management structure referred to in Regulation 9 setting out the duties and responsibilities of each person in the management structure,
  - (b) operating procedures and instructions required by Regulation 13(a), relating to the safety and health of persons at work at the quarry in both normal and critical situations there,
  - (c) arrangements for the review of safety measures in accordance with section 20 of the Act of 2005,
  - (d) system of permits to work, if required by Regulation 14,
  - (e) inspection, maintenance and testing schemes prepared in accordance with Regulation 18,
  - (f) vehicles and traffic rules required by Regulation 22,
  - (g) instructions required by Regulation 28(c),
  - (h) precautions taken to protect against, detect and combat the outbreak and spread of fire required by Regulation 30,
  - (i) arrangements made and the equipment and measures necessary to prevent explosions required by Regulation 30,
  - (j) shotfiring rules made under Regulation 45,
  - (k) operating procedures for excavations, tips and lagoons required by Regulation 52,
  - (l) conclusions of any appraisal, site investigation or geotechnical assessment of an excavation, tip or lagoon undertaken pursuant to Regulations 53 and 54, and
  - (m) arrangements for health surveillance required by Regulation 59.
- (2) In addition to the matters referred to in paragraph (1), the safety statement shall, where appropriate, also include—
- (a) a plan detailing the equipment and measures required to protect persons at work at the quarry from the risk of explosion or fire in compliance with Regulations 30 and 31(1),
  - (b) where toxic gases are or may be present in the atmosphere at the quarry in such concentration that the atmosphere may be harmful to the health of persons at work, a plan detailing the protective equipment and measures required to protect persons at work at the quarry from the harmful atmosphere in compliance with Regulation 31(2), and
  - (c) a diagram of the quarry indicating those areas to which these Regulations do not apply by virtue of Regulation 3(2).

*Co-ordinated measures.*

11. Without prejudice to section 21 of the Act of 2005, where a common operator has been appointed under Regulation 5(5), that operator shall co-ordinate the implementation of all measures relating to the safety, health and welfare of persons at work at the quarry.

*Safety induction, competence and skills certification.*

12. The operator shall ensure that no person shall undertake any quarrying operations unless that person—
- (a) has received appropriate site-specific safety induction instruction,
  - (b) is either competent to do that work, or does it under the instruction and supervision of some other person who is competent to give instruction in, and supervise the doing of, that work for the purpose of training that person, and
  - (c) if engaged in any of the tasks specified in Schedule 1, has been issued with and is in possession of a current registration card or can show evidence of successful completion of training in respect of the Quarries Skills Certification Scheme.

*Instructions, rules and operating procedures.*

13. The operator shall—
- (a) ensure that suitable instructions and operating procedures are in place at the quarry with a view to securing the safe use of work equipment,
  - (b) ensure that copies of all instructions, rules and operating procedures required to be made under these Regulations are kept at the quarry and given to any person at work at the quarry to whom they apply, and
  - (c) take all reasonable measures to ensure that each person at work at the quarry understands the instructions, rules and operating procedures made under these Regulations that apply to that person.

*Permits to work.*

14. The operator shall ensure that—
- (a) based on an assessment of the risks, a system of permits to work is introduced for the carrying out of—
    - (i) hazardous activities, and
    - (ii) activities which, when carried out in conjunction with other activities, may cause serious risks to the safety, health and welfare of persons at work, and
  - (b) a permit to work referred to in paragraph (a) is issued by a competent person before the particular activity concerned commences and specifies the conditions to be fulfilled and protective measures to be taken before, during and after the carrying out of the activity.

*Duties of persons at work.*

15. Every person at work to which these Regulations apply shall—
- (a) comply with all applicable instructions and rules and operating procedures, and
  - (b) show his or her registration card or evidence of successful completion of training in respect of the Quarries Skills Certification Scheme when requested to do so by an inspector of the Health and Safety Authority, the person's employer, the operator, or if applicable, the common operator

*Consultation.*

16. Every operator and employer at a quarry shall consult at the quarry with their safety representatives and employees, as the case may be, in relation to the requirements of these Regulations and section 26

of the Act of 2005, taking account of the need, whenever necessary, for co-operation and co-ordination among—

- (a) operators and employers,
- (b) employees and other persons at work, and
- (c) the safety representatives,

in order to promote and develop measures for protecting the safety, health and welfare of persons at work at the quarry and to monitor the effectiveness of such measures.

*Record keeping.*

17. (1) The operator shall ensure that—

- (a) every report, notification or other record required to be made under these Regulations is kept at the quarry or other suitable place, but when quarrying operations have permanently ceased at the quarry the record shall be kept—
  - (i) at the registered office of the operator, or
  - (ii) where the operator is an individual, at his or her place of business,

for a period of 5 years, unless the provision concerned imposes a different period, and

- (b) a copy of the written statement of duties of all persons appointed at the quarry under these Regulations is kept at the quarry or other suitable place for at least one year from the date of termination of the person's employment.
- (2) Subject to paragraph (1), where under these Regulations records, reports, or other documents are required to be made, it is sufficient compliance with the requirement if the operator and, where appropriate, other person concerned—
- (a) make and maintain the record, report or other document by electronic means, and
  - (b) duly authenticate it as soon as is practicable afterwards.
- (3) Without prejudice to section 64 of the Act of 2005, any person having custody of the records required by the Act of 2005 or these Regulations shall—
- (a) ensure that the records are open to inspection by an inspector, and
  - (b) forthwith send to an inspector such extracts from them or copies of them as the inspector may from time to time require in accordance with section 64 of the Act of 2005.

### **PART 3**

#### General Safety Provisions

*Inspection, maintenance and testing.*

18. (1) The operator shall, with a view to securing, so far as is reasonably practicable, the safety, health and welfare of persons at work in the quarry—

- (a) prepare and keep up to date suitable schemes for the systematic inspection, maintenance and, where appropriate, testing of—
  - (i) all parts of the quarry,
  - (ii) all buildings (whether temporary or permanent) at the quarry, and
  - (iii) any plant and work equipment at the quarry,

- (b) ensure that suitable records are made of inspections, maintenance and tests carried out in pursuance of subparagraph (a) and that each such record lists any significant defects and the steps taken, or to be taken, to remedy them and is—
    - (i) signed by the person making it, and
    - (ii) countersigned by an appropriate person in the management structure under Regulation 9, and
  - (c) ensure that a sufficient number of competent persons are appointed to undertake the activities referred to in subparagraphs (a) and (b).
- (2) Without prejudice to the generality of subparagraphs (1) (a) and (b), the scheme shall specify the frequency of inspection of—
  - (a) the faces above every workstation at the quarry and every road used by persons at work at the quarry for the purpose of their work or of getting to or from their place of work are inspected for loose ground or loose rocks,
  - (b) faces, sides and any overburdens of the quarry that may cause danger at any place (including any road) are inspected,
  - (c) all external parts of all machinery and all appliances forming part of the equipment of the quarry are inspected, and
  - (d) where, during an inspection under subparagraph (a) or (b), conditions are observed that constitute a significant hazard, or a potential significant hazard, the provisions of Regulation 53 are carried out.
- (3) The operator shall ensure that appropriate remedial measures are taken following an inspection under this Regulation.
- (4) The operator shall ensure that a record is made of each inspection carried out under paragraph (2) and the appropriate remedial measures taken under paragraph (3).

*Safety equipment.*

19. The operator shall ensure that adequate safety equipment is maintained, ready for use and in good working order at all times and such maintenance is undertaken with due regard to ongoing activities.

*Benches and haul roads.*

20. The operator shall ensure, so far as is reasonably practicable, 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, and
- (b) where there is a risk of vehicles or plant accidentally leaving any bench or haul road, adequate precautions are taken by the installation of barriers or otherwise to control such risks.

*Safeguarding edges of excavations and lagoons.*

21. The operator shall ensure that at the quarry -

- (a) the overburden at or near the top of a face or a side of the quarry is cleared back to a sufficient distance and depth so as not to endanger any persons at work;
- (b) material is not placed or stacked at the quarry near or adjacent to the edge of any excavation or lagoon, where so that it is likely to endanger persons at work;
- (c) no load, vehicle, plant or equipment is placed or moved near or adjacent to the edge of any excavation or lagoon so that it is likely to cause a collapse of the side of the excavation or lagoon and thereby endanger any persons at work, and
- (d) where necessary, shall ensure that appropriate barriers are provided near or adjacent to the edge of any excavation or lagoon.

*Vehicle and traffic rules.*

22. (1) The operator shall make suitable vehicle and traffic rules in order to prevent, as far as reasonably practicable, the risks to persons arising from the use of vehicles at the quarry, including where machines or vehicles enter or leave the quarry.
- (2) The operator shall ensure that transport vehicles, earth-moving machinery, materials-handling machinery and locomotives used at the quarry, including those operated by another employer at the quarry—
- (a) are of good design and construction taking into account as far as possible ergonomic principles,
  - (b) are maintained in good working order,
  - (c) are properly used,
  - (d) are not operated otherwise than by—
    - (i) a competent person, or
    - (ii) a person under the supervision of a competent person for the purpose of his or her training, and
  - (e) are provided, in the case of the earth-moving machinery and materials-handling machinery specified in Schedule 2, with appropriate devices which, where the visibility of the operator is restricted, remedy the hazards arising from inadequate direct vision.

*Danger areas.*

23. (1) The operator shall ensure that—
- (a) danger areas are clearly marked,
  - (b) equipment or barriers are installed at any danger area to restrict inadvertent entry to that area by persons at work not authorised to enter,
  - (c) where a person at work is authorised to enter a danger area, appropriate measures are taken to protect his or her safety, health and welfare.
- (2) In this Regulation “danger area” means an area of the quarry at which there is a significant risk to the safety, health or welfare of persons working there, due to the nature of the work being carried out there (including a risk of a person falling a distance likely to cause personal injury) or for any other reason.

*Traffic routes.*

24. The operator shall ensure that—
- (a) traffic routes, including stairs, fixed ladders, loading bays and ramps, are designed, located, laid out and made negotiable to ensure easy, safe and appropriate access in such a way as not to endanger persons working in the vicinity of these traffic routes,
  - (b) routes used for pedestrian or goods traffic, or both, including those used for loading and unloading, are dimensioned in accordance with the number of potential users and the type of activity concerned,
  - (c) if means of transport are used on traffic routes, a sufficient safety clearance or adequate protective devices are provided for other quarry users, and routes are clearly marked, regularly checked and properly maintained
  - (d) sufficient clearance is allowed between vehicle traffic routes and doors, gates, passages for pedestrians, corridors and staircases, and
  - (e) traffic routes are clearly identified for the protection of persons at work.

*Outdoor workstations.*

25. The operator shall ensure that—

- (a) workstations, traffic routes and other areas or installations outdoors that are occupied or used by persons at work in the course of their activities are organised in such a way that pedestrians and vehicles can circulate safely, and
- (b) when persons at work are deployed at outdoor workstations, such workstations are arranged so that such persons, as far as possible—
  - (i) are protected against inclement weather conditions,
  - (ii) are not exposed to harmful noise levels or to harmful external influences such as gases, vapours or dust, and
  - (iii) cannot slip or fall.

*Protection from falling objects and provision of safety helmets.*

26. (1) The operator shall ensure that—

- (a) adequate measures are taken to prevent persons at work from being struck by any falling object,
- (b) where feasible, persons are protected by collective methods against falling objects, and
- (c) materials, equipment and other articles are laid out or stacked

in such a way as to prevent their collapsing or overturning.

(2) The operator shall ensure that every person under his or her direct control at work at the quarry is provided with—

- (a) a suitable safety helmet, or
- (b) other appropriate head protection

that complies with the relevant statutory provisions, unless there is no foreseeable risk of injury to the head.

(3) The operator shall ensure that—

- (a) each safety helmet or other head protection provided for use at the quarry is marked so that it may be identified by the person to whom it has been issued, and
- (b) the helmet or other head protection is not issued to any other person unless and until it has been cleaned and disinfected.

(4) A person shall not, at a quarry, throw, drop or allow to be shot or ejected downwards any material or object, including waste material, from a height where it is liable to cause injury.

(5) A person who moves materials or objects, including waste materials, from a height at a quarry where they are liable to cause injury, shall lower them in such a manner so as to avoid injury to persons.

*Prevention of drowning.*

27. (1) The operator shall ensure that where, at a quarry, there is a risk of a person falling from—

- (a) the edge of land adjacent to water,
- (b) a structure adjacent to or above water, or
- (c) a floating platform

secure fencing is provided near the edge of the land, structure or platform, as appropriate, to prevent such a fall.

- (2) To the extent necessary for the access of persons or movement of materials, paragraph (1) does not apply if appropriate precautions are taken, so far as is reasonably practicable, to ensure the safety and health of persons at work.
- (3) Without prejudice to paragraph (1), where, in or adjacent to the quarry, there is water into which a person, in the course of his or her work, is liable to fall with risk of drowning, the operator shall ensure that—
  - (a) suitable rescue equipment is provided, properly maintained and ready for use,
  - (b) arrangements are made for the prompt rescue of any such person who is in danger of drowning, and
  - (c) personal flotation devices conforming to European Norm (EN) or, where appropriate, an equivalent standard, are provided and worn at all times by persons at risk at the quarry.
- (4) The operator shall ensure that personal flotation devices provided under this Regulation are—
  - (a) properly maintained,
  - (b) checked before each use,
  - (c) inspected in accordance with the manufacturer's instructions, and
  - (d) subjected to a thorough examination by a competent person every 12 months.
- (5) On the day of an inspection or examination under paragraph (4), the person who carries out the inspection or examination, as the case may be, shall—
  - (a) make a report of the results in an approved form,
  - (b) sign and date the report, and
  - (c) give a copy of the report to the operator.

*Escape and rescue facilities.*

28. Without prejudice to section 11 of the Act of 2005, the operator shall ensure that—

- (a) adequate means of escape and rescue are provided and maintained, so as to enable persons to leave the quarry promptly and safely in the event of danger,
- (b) adequate means of communication and warning are provided to enable assistance, escape and rescue operations to be launched at once when required,
- (c) instructions concerning the use of emergency equipment and the action to be taken in the event of an emergency at or near the quarry are prepared,
- (d) persons at work at the quarry are trained in appropriate action to be taken in the event of an emergency,
- (e) rescue equipment is provided, maintained in good working condition and kept ready for use at readily accessible, appropriately sited and clearly sign-posted places,
- (f) emergency routes and exits remain clear and lead by the most direct means to the open air, a safe area or a safe assembly or evacuation point,
- (g) the number, distribution and dimensions of the emergency routes and exits are appropriate to the use, equipment and dimensions of the quarry and the maximum number of persons that may be present,
- (h) emergency doors open outwards and are not so locked or fastened that they cannot be easily and immediately opened by any person who may require to use them in an emergency,
- (i) emergency routes and exits, and the traffic routes and doors giving access to such routes and exits, are free from obstruction so that they can be used at any time without hindrance,
- (j) emergency routes and exits requiring illumination are provided with emergency lighting of adequate intensity, and
- (k) specific emergency routes and exits are indicated by signs in accordance with the Principal Regulations applying to safety or health signs.

*Safety drills.*

29. The operator shall ensure that safety drills are held at the quarry at regular intervals for persons at work there for the purposes of—
- (a) training the persons who work at the quarry in the appropriate actions to be taken in an emergency, including, where appropriate, the correct use, handling and operation of emergency equipment, and
  - (b) training and determining the skills of such persons to whom specific duties involving the use, handling and operation of such equipment have been assigned in the event of an emergency.

*Fire and explosion hazards.*

30. (1) This Regulation applies without prejudice to section 11 of the Act of 2005 and the Fire Services Acts 1981 and 2003 (No. 30 of 1981 and No. 15 of 2003).
- (2) The operator shall ensure that—
- (a) no person at work at the quarry uses a naked flame or carries out any work that could give rise to a risk of an unintended fire or explosion, unless sufficient measures to prevent such a fire or explosion are taken, and
  - (b) no person smokes or carries a lighted pipe, cigar or cigarette in any part of the quarry where there is a risk of fire or explosion.
- (3) The operator, depending on the features of the quarry, the dimensions and use of rooms, the on-site equipment, the physical and chemical properties of the substances present and the maximum potential number of persons present at work, shall provide or cause to be provided at the quarry an adequate number of—
- (a) appropriate fire-fighting devices, and
  - (b) where required, fire detectors and alarm systems.
- (4) The operator shall ensure that—
- (a) fire-fighting devices, fire detectors and alarm systems are regularly checked and properly maintained,
  - (b) appropriate tests and fire drills take place at regular intervals,
  - (c) non-automatic fire-fighting equipment is easily accessible, easy to use and, where necessary, protected from potential damage, and
  - (d) fire-fighting equipment is indicated by signs in accordance with the relevant statutory provisions applying to safety and health signs at work.

*Explosive or harmful atmospheres.*

31. (1) Where there is a potential for harmful or explosive atmospheres to be present at the quarry, the operator shall ensure that-
- (a) steps are taken in order to determine whether potentially harmful or explosive substances are present in the atmosphere and, where such substances are present, the concentration of such substances in the atmosphere is measured,
  - (b) automatic devices are provided that are designed to—
    - (i) monitor continuously the concentration of explosive or flammable gases in the atmosphere,
    - (ii) trigger an alarm if such concentration reaches a dangerous level, and
    - (iii) cut off power to any plant that, because of the concentration of such gases in the atmosphere, gives rise to a risk to the safety and health of any person,

- (c) where devices are provided in accordance with subparagraph (b)(i), a record of the levels of concentration of such gases in the atmosphere is made at such intervals as are specified in the safety statement,
  - (d) at any place in the quarry where there is a risk of the occurrence or accumulation of an explosive atmosphere, all necessary measures are taken in order—
    - (i) to prevent such occurrence and accumulation, or
    - (ii) where this is not practicable, to prevent the ignition of such an atmosphere, and
  - (e) at any place in the quarry where there is a risk of the occurrence or accumulation of a substance harmful to health in the atmosphere, appropriate measures are taken in order to—
    - (i) prevent such occurrence and accumulation or, where this is not practicable,
    - (ii) extract or disperse that harmful substance in such a way that persons are not placed at risk.
- (2) When persons at work are present in a particular place in the quarry where they are exposed to a substance in the atmosphere that is, or may be, harmful to health, the operator shall ensure that—
- (a) appropriate and sufficient breathing and resuscitation equipment is—
    - (i) available,
    - (ii) suitably stored, and
    - (iii) maintained,
  - (b) a sufficient number of persons trained in the use of such equipment are present, and
  - (c) where harmful substances accumulate or may accumulate in the atmosphere, appropriate measures are taken to ensure—
    - (i) their suppression at source,
    - (ii) their extraction at source,
    - (iii) their removal, or
    - (iv) the dilution of accumulations of such substances, in such a way that persons are not at risk.

*Lighting.*

32. The operator shall ensure that—

- (a) the quarry is provided throughout with lighting capable of supplying illumination sufficient to ensure the health and safety of persons therein,
- (b) workstations, as far as possible—
  - (i) receive sufficient natural light, and
  - (ii) bearing in mind the climatic conditions, are equipped with artificial lighting adequate for the protection of the safety and health of persons at work,
- (c) lighting installations in rooms containing workstations and in passage-ways are placed in such a way that the type of lighting provided does not present a risk of accident to persons at work, and
- (d) every part of the quarry in which a person is likely to be exposed to risks in the event of the failure of artificial lighting is provided with emergency lighting of adequate intensity and, where that is not possible, persons at work in that place are provided with an appropriate personal lamp.

*Prevention of unauthorised entry.*

33. The operator shall ensure that—

- (a) quarry boundaries are signposted and laid out so as to be clearly visible and identifiable,
- (b) safe means of access and egress at the quarry are—

- (i) provided and maintained, and
  - (ii) where appropriate, indicated,
- (c) adequate precautions are taken to protect persons present at, or in the vicinity of, the quarry from risks that may arise from quarrying operations, and
- (d) adequate precautions are taken to prevent unauthorised entry to the quarry including, where appropriate, the provision of barriers.

#### PART 4

##### Safety Provisions for Ancillary Activities and Installations

###### *Definition of "place of work" (Part 4).*

34. In this Part "place of work" means—

- (a) premises at the quarry housing workstations, and
- (b) other premises at the quarry to which persons at work have access for the purpose of the immediate and ancillary activities and installations of the quarry, including premises providing accommodation, rest and sanitary facilities.

###### *Stability and solidity.*

35. The operator shall ensure that a place of work, whether temporary or permanent, has a structure and solidity appropriate to its use, and—

- (a) has been designed and constructed, and
- (b) is operated, supervised and maintained,

so as to withstand the environmental forces anticipated and to be safe and with-out risk to health.

###### *Floors, walls and ceilings of rooms.*

36. (1) The operator shall, in respect of a place of work, ensure that—

- (a) floors—
  - (i) have no dangerous bumps, holes or slopes, and
  - (ii) are fixed, stable and not slippery,
- (b) workstations are adequately insulated, having regard to the type of work activity involved and the physical activity of the persons at work, and
- (c) surfaces of floors, walls and ceilings are such that they—
  - (i) can be cleaned, and are cleaned, and
  - (ii) where appropriate, refurbished to an appropriate standard of hygiene.

(2) The operator shall ensure that transparent or translucent walls, and in particular, glass partitions, in a place of work or in the vicinity of outdoor work-stations and traffic routes, are—

- (a) clearly indicated, and
- (b) made of safety material, or are shielded from such places or routes,

in order to prevent persons from coming into contact with such walls or partitions, or being injured in the event of such walls or partitions shattering.

###### *Room dimensions, air space in rooms and freedom of movement at workstations.*

37. The operator shall, in respect of a place of work, ensure that—

- (a) rooms have sufficient surface area, height and air space to allow per-sons at work to perform their work without risk to their safety, health or welfare, and

- (b) the dimensions of the free space at the workstation allow persons at work sufficient freedom of movement and enable them to perform their work safely.

*Windows and skylights.*

38. The operator shall, in respect of a place of work, ensure that—

- (a) windows, skylights and ventilation devices—
  - (i) that are meant to be opened, adjusted or secured, are designed so that these activities can be carried out in a safe manner, and
  - (ii) are not positioned so as to constitute a hazard to persons at work when open, and
- (b) windows and skylights can be cleaned without risk.

*Doors and gates.*

39. The operator shall, in respect of a place of work, ensure that—

- (a) 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 concerned,
- (b) transparent doors are appropriately marked at a conspicuous level,
- (c) swing doors and gates are transparent or have see-through panels,
- (d) if transparent or translucent surfaces in doors and gates are not made of safety material and there is a danger that persons at work may be injured in the event of a door or gate shattering, the surfaces are protected against breakage,
- (e) sliding doors are fitted with a safety device to prevent them from being derailed or falling over,
- (f) doors and gates opening upwards are fitted with a mechanism to secure them against falling back,
- (g) doors forming part of escape routes are—
  - (i) appropriately marked,
  - (ii) possible to open from the inside at any time without special assistance, and
  - (iii) possible to open when the place of work is occupied,
- (h) doors for pedestrians are provided in the immediate vicinity of any gates intended essentially for vehicle traffic, unless it is safe for pedestrians to pass through and such doors are clearly marked and left permanently unobstructed,
- (i) mechanical doors and gates function in such a way that there is no risk of accident to persons at work, are fitted with easily identifiable and accessible emergency shutdown devices and, where they open automatically in the event of a power failure, it is also possible to open them manually,
- (j) where chains or similar devices are used to prevent access to any place, these are clearly visible and appropriately identified by signs denoting any prohibition or warning.

*Ventilation.*

40. The operator shall, in respect of a place of work, ensure that—

- (a) steps are taken to ensure that there is sufficient fresh air in enclosed rooms, having regard to the working methods used and the physical demands placed on the persons at work,
- (b) where a forced ventilation system is used, it is maintained in good working order,
- (c) any breakdown in a forced ventilation system is indicated by a control system, where this is necessary for the health of persons at work,
- (d) where air-conditioning or mechanical ventilation installations are used, they operate in such a way that persons at work are not exposed to draughts that cause discomfort or ill health, and
- (e) any deposit or dirt likely to create danger to the health of persons at work by entering into the atmosphere is removed without delay.

*Temperature in rooms.*

41. The operator shall, in respect of a place of work, ensure that—

- (a) during working hours, the temperature in rooms containing workstations is suitable for the persons at work, having regard to the working methods being used and the physical demands placed on them,
- (b) the temperature in rest areas, rooms for duty staff, sanitary facilities, canteens and first aid rooms is appropriate to the particular purpose of such areas, and
- (c) in relation to windows, skylights and glass partitions, excessive effects of sunlight are avoided, having regard to the nature of the work and the characteristics of the place of work.

PART 5

Explosives

*Application of Part 5.*

42. This Part shall apply to the storage, transport, preparation for use, use and disposal of explosives at a quarry.

*Appointment of explosives supervisors, shotfirers, drillers and storekeepers.*

43. (1) The operator shall—

- (a) appoint one or more competent persons as explosives supervisors at the quarry and obtain confirmation of acceptance of such appointments in writing,
- (b) ensure that, at any given time, there is only one person acting as the explosives supervisor at the quarry,
- (c) appoint one or more competent persons as shotfirers and trainee shot-firers at the quarry,
- (d) appoint, where necessary, one or more competent persons as store-keepers to ensure the safe storage and transport of explosives at the quarry, and
- (e) appoint a competent person to carry out drilling of shotholes,
- (f) ensure that a record of the appointment at the quarry of any explosives supervisor, shotfirer, storekeeper and driller is kept at the quarry or some other suitable place for the period of his or her appointment and for 3 years following the termination of his or her appointment.

(2) Nothing in these Regulations shall prevent a person appointed as quarry manager under Regulation 9(1)(a) from being appointed as explosives supervisor or shotfirer, or both, under this Regulation, provided that he or she is competent to discharge those functions.

*Storage, transport, use and disposal of explosives.*

44. The operator shall ensure that—

- (a) so far as is reasonably practicable, all explosives are stored, transported, used and disposed of safely and securely,
- (b) operations involving the storage, transport, use or disposal of explosives are carried out by, or under the close personal supervision of, persons appointed under Regulation 43,
- (c) such facilities and equipment as are necessary to enable shotfiring operations to be carried out safely are provided,
- (d) any vehicle that is provided for use in relation to shotfiring operations is safe for use and so marked during such use as to be readily identifiable from a distance,
- (e) detonators are stored and transported in separate containers from other explosives, and
- (f) explosives are kept at all times in a locked explosives store or under the close supervision of a suitable person.

*Shotfiring rules.*

45. The operator shall ensure that suitable shotfiring rules are made and complied with. Such rules shall set out procedures for the following:

- (a) shotfiring operations at the quarry,
- (b) appointing explosives supervisors, shotfirers, trainee shotfirers and storekeepers,
- (c) authorising other persons who will be involved with the storage, transport, use or disposal of explosives,
- (d) dealing with misfires,
- (e) disposing of surplus explosives, detonators, accessories and packaging.

*Blast specification.*

46. The operator shall ensure that—

- (a) an adequate written blast specification, including identification of the danger zone based on an assessment of the risks, is prepared by the explosives supervisor for each shotfiring operation at the quarry to ensure that, so far as is reasonably practicable, when such shotfiring occurs, it will not give rise to danger, and
- (b) a copy of any relevant information contained in the blast specification referred to in paragraph (a) is given to any person upon whom it imposes duties.
- (c) the azimuth, inclination, depth, and spacing of any shotholes drilled are in accordance with the blast specification

*Shotfiring operations.*

47. The operator shall ensure that—

- (a) so far as is reasonably practicable, each shotfiring operation is carried out safely and in accordance with the shotfiring rules and blast specification,
- (b) all shotfiring operations are carried out under the close personal supervision of the shotfirer,
- (c) a trainee shotfirer at the quarry does not fire shots, except when he or she is under the close personal supervision of a shotfirer, and
- (d) records of all shotfiring operations carried out at the quarry are kept.

*Duties of explosives supervisor and shotfirer.*

48. (1) The explosives supervisor at the quarry shall—

- (a) advise the operator as to the observance of the relevant statutory provisions in relation to the storage, transport, use and disposal of explosives at the quarry,
- (b) organise and supervise all work involving the storage, transport, use and disposal of explosives at the quarry,
- (c) based on an assessment of the risks, prepare in writing a blast specification for each shotfiring operation which, so far as is reasonably practicable, shall ensure that, when shotfiring occurs, it will not give rise to danger,
- (d) ensure that, prior to shotfiring operations being carried out, he or she is familiar with the area that may be affected by the shotfiring operations, inspects the face to be blasted and is satisfied that the blast specification is adequate,
- (e) ensure that no person carries out any work in relation to explosives unless they are trained, adequately supervised and instructed to do so, and
- (f) ensure that all equipment to be used in shotfiring operations is suitable, safe and adequately maintained.

- (2) The explosives supervisor and the shotfirer at a quarry shall carry out any shotfiring operations in accordance with the shotfiring rules and blast specification.
- (3) Before a shot is fired, a shotfirer shall—
  - (a) ensure that any variations to the blast specification have been brought to the attention of and agreed with the explosives supervisor,
  - (b) ensure that no person is within, or may enter within, the danger zone specified in the blast specification when the shot is being fired,
  - (c) check the shotfiring system or circuit to ensure that it has been connected correctly,
  - (d) 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,
  - (e) where appropriate, ensure that the electrical integrity of the shotfiring system or circuit is such as to make a misfire unlikely, and
  - (f) ensure that a warning signal is given and that the shot is fired from a safe place.
- (4) After a shot is fired, a shotfirer shall—
  - (a) ensure that no person enters within the danger zone specified in the blast specification until the all-clear signal is given,
  - (b) inspect the blast site to check the result of the blast, the condition of the face and whether any misfire has occurred,
  - (c) report immediately any hazardous conditions or misfires to the operator and the explosives supervisor, and
  - (d) ensure that normal working is resumed only when he or she is satisfied that it is safe to do so.

*Misfires.*

49. In the event of a misfire, the operator, in consultation with the quarry manager (if not the same person), shall ensure, so far as is reasonably practicable, that—
  - (a) no person, other than himself or herself, the explosives supervisor, the shotfirer, any trainee shotfirer or any other person authorised by him or her, enters the danger area until a period of 5 minutes has elapsed since the misfire and any shotfiring apparatus has been disconnected from the shot,
  - (b) appropriate steps are taken to determine the cause of the misfire and to deal with it, and
  - (c) a suitable record is kept of the misfire and any action taken.

*Prohibited activities.*

50. (1) No person, other than—
  - (a) a person engaged in the transport of explosives or detonators to or from a quarry,
  - (b) an explosives supervisor,
  - (c) a shotfirer or trainee shotfirer,
  - (d) a storekeeper, or
  - (e) any other person authorised by the operator to do so

shall handle explosives or detonators at a quarry.

- (2) No person shall bring any substance or article (other than explosives) likely to cause an unintended explosion or fire within 100 metres of any explosives or take any naked flame within 100 metres of any explosives at a quarry.

- (3) No person shall forcibly remove any detonator lead or other system for initiating shots from a shothole at a quarry 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, or
  - (b) in a shothole in which a shot has previously been fired, unless he or she is dealing with a misfire in accordance with action taken under Regulation 49(b).
- (5) No person shall fire a shot at a quarry—
  - (a) unless he or she is an explosives supervisor, shotfirer or trainee shot-firer within the meaning of these Regulations, or
  - (b) other than by means of a suitable exploder,
- (6) No person, other than an explosives supervisor, a shotfirer or trainee shot-firer, shall dispose of surplus explosives, detonators, accessories or packaging remaining following shotfiring operations at a quarry.

## PART 6

### Safety of Excavations (including Quarry Faces), Tips and Lagoons

#### *General duty to ensure safety of excavations, tips and lagoons.*

51. The operator shall ensure that excavations (including quarry faces), tips and lagoons are designed, constructed (in relation to tips and lagoons), operated and maintained so as to ensure, so far as is reasonably practicable, that instability or movement which is likely to give rise to a risk to the safety, health and welfare of any person is avoided.

#### *Operating procedures for excavations, tips and lagoons.*

52. The operator shall ensure that suitable operating procedures are in place for the safe operation of excavations, tips and lagoons and that such procedures, in particular, specify-
  - (a) the manner in which such activities are to be carried out,
  - (b) the nature and extent of supervision of such activities, and
  - (c) the protective measures to be taken during such activities to ensure the safety, health and welfare of any person and the safety and stability of the excavation, tip or lagoon.

#### *Appraisal and site investigation of excavations, tips and lagoons.*

53. (1) Subject to paragraph (2), the operator shall ensure that, before quarrying operations commence or re-commence in a particular area in the quarry, a suitable appraisal of all proposed and existing-
  - (a) excavations,
  - (b) tips, and
  - (c) lagoons

in that particular area is undertaken by a competent person in order to determine whether any such excavation, tip or lagoon represents a significant hazard, or a potential significant hazard.

- (2) Where the face height of an excavation in a particular area of the quarry planned to be worked exceeds 20 metres, the operator shall ensure that, before quarrying operations commence or re-commence in that particular area, a geotechnical assessment is carried out in accordance with Regulation 54.

- (3) Where an appraisal by a competent person under paragraph (1) identifies a significant hazard that cannot be rectified immediately in a safe manner, the operator shall ensure that the provisions of subparagraphs (a) to (c) of paragraph (5) are complied with.
- (4) Where an appraisal by a competent person under paragraph (1) identifies a potential significant hazard that cannot be rectified immediately in a safe manner, the operator shall ensure that -
  - (a) the provisions of subparagraphs (a) and (b) of paragraph (5) are complied with, and
  - (b) a geotechnical specialist carries out a site investigation to determine whether a geotechnical assessment under Regulation 54 is required.
- (5) Where the conclusion reached by the geotechnical specialist, following a site investigation made under this Regulation, is that the excavation, tip or lagoon represents a significant hazard, the operator shall ensure that—
  - (a) appropriate protective measures are taken, including informing all persons affected by it,
  - (b) only work that can be carried out safely is undertaken at the excavation, tip or lagoon, and
  - (c) a geotechnical assessment is carried out in accordance with Regulation 54 .
- (6) The operator shall ensure that -
  - (a) any significant findings, and
  - (b) any conclusions reached and the reasons for those conclusionsmade under an appraisal or a site investigation pursuant to this Regulation are recorded by the competent person or the geotechnical specialist, as the case may be.

*Geotechnical assessments.*

54. (1) In this Part “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, tip or lagoon and shall include-
- (a) preparation by or under the supervision of the geotechnical specialist or, as appropriate, consideration by the geotechnical specialist of the documents and particulars specified in Schedule 3,
  - (b) the conclusions of the geotechnical specialist as to -
    - (i) the safety and stability of the existing or proposed excavation, tip or lagoon being assessed, including his or her conclusions as to whether the excavation, tip or lagoon represents a significant hazard by way of instability or movement,
    - (ii) whether any remedial works are required in relation to the excavation, tip or lagoon being assessed and the date by which such works should be completed,
    - (iii) the date by which the next geotechnical assessment should take place, and
    - (iv) where appropriate, any required changes to the operating procedures in respect of the excavation, tip or lagoon.
- (2) The operator shall ensure that -
- (a) any significant findings made during a geotechnical assessment required under Regulation 53 , any conclusions reached in accordance with paragraph (1)(b), and the reasons for those conclusions are recorded by the geotechnical specialist undertaking the assessment,
  - (b) the geotechnical specialist signs and dates any such record and records his or her professional qualifications thereon,

- (c) (i) any information available that may be relevant for the purposes of a geotechnical assessment is made available to the geotechnical specialist undertaking that assessment, and
- (ii) sufficient records are kept of the nature, quantity and location of all substances accumulated or deposited at a tip, excavation or lagoon to enable an accurate assessment of the stability of that tip, excavation or lagoon to be made,
- (d) any remedial works identified during the geotechnical assessment in accordance with paragraph (1)(b)(ii) are undertaken by the date specified or before quarrying operations are resumed,
- (e) where the conclusion reached by a geotechnical specialist in accordance with paragraph (1)(b) is that there is no significant hazard -
  - (i) the geotechnical specialist specifies the frequency with which appraisals under Regulation 53 are to be conducted in the future in order to ensure the continued safety and stability of the excavation, tip or lagoon, and
  - (ii) a record of that specification is made by the geotechnical specialist, and
- (f) copies of all geotechnical assessments are kept at the quarry for inspection and are retained by the operator for at least 5 years from the date they were made.

## PART 7

### General Health Hazards

#### *Health hazards.*

55. (1) The operator, where persons are liable to be exposed to any chemical, physical or biological hazard to such an extent as is liable to be dangerous to health, shall ensure that appropriate preventive measures are taken at the quarry against that exposure.
- (2) The preventive measures referred to in paragraph (1) shall include—
- (a) wherever possible, the replacement of a hazardous substance by a harmless or less hazardous substance,
  - (b) technical measures applied to the plant, machinery, equipment or process, or
  - (c) where it is not possible to comply with subparagraph (a) or (b), other effective measures, including the use of personal protective equipment and protective clothing.

#### *Atmospheric influences.*

56. The operator shall ensure that persons working outdoors at the quarry are protected against atmospheric conditions that could affect their safety and health.

#### *Disposal of waste.*

57. The operator shall ensure that waste from the quarry is not—
- (a) destroyed, or
  - (b) otherwise disposed of

in a manner liable to be injurious to the safety and health of persons.

#### *Stationary internal combustion engines and exhaust gases.*

58. The operator shall ensure that—
- (a) no stationary internal combustion engine is used at the quarry in any enclosed or confined place, unless specific provision is made for conducting the exhaust gases from the engine into the open air, or

- (b) any such enclosed or confined place is adequately ventilated so as to prevent danger to health from the exhaust gases.

*Health surveillance.*

59. Where an employer at a quarry makes health surveillance available to persons at work in accordance with section 22 of the Act of 2005, he or she shall ensure that such health surveillance is made available before those persons are assigned to particular work activities in the quarry

PART 8

Welfare

60.

*Shelters and accommodation for clothing and taking meals.*

61.

60. (1) The operator shall ensure that, subject to paragraphs (2) and (3), there is provided at or in the immediate vicinity of the quarry for the use of persons at work and conveniently accessible to them—
- (a) adequate and suitable enclosed accommodation for taking shelter during interruptions of work owing to bad weather and for depositing clothing not worn during working hours, being accommodation containing, where practicable, adequate and suitable means of enabling such persons to warm themselves and to dry wet clothing,
  - (b) adequate and suitable accommodation for the deposit of protective clothing used for work and kept, when not in use, at or in the immediate vicinity of the quarry with such arrangements as are practicable for drying such clothing if it becomes wet,
  - (c) adequate and suitable accommodation, affording protection from the weather and including sufficient tables with impermeable surfaces and seats with backs, for taking meals,
  - (d) facilities for boiling water and, where there are more than 5 persons at work at a quarry and heated food is not otherwise available at the quarry, adequate facilities for heating food, and
  - (e) an adequate supply of potable drinking water and possibly another suitable non-alcoholic beverage at a convenient point or convenient points.
- (2) For the purposes of paragraph (1), in determining whether accommodation is conveniently accessible, account shall be taken of any transport provided for the persons at work.
- (3) For the purposes of paragraph (1)(c), in determining whether accommodation of any kind provided in pursuance of that subparagraph at any time and place is adequate, account shall be taken of the number of persons at work who appear likely to use such accommodation at that time and place.
- (4) The operator shall ensure that all accommodation provided in accordance with this Regulation is—
- (a) properly ventilated, adequately lighted, kept in a clean, hygienic and orderly condition, and
  - (b) not used for the deposit or storage of materials or plant.

*Changing rooms and lockers.*

61. (1) An operator shall provide or cause to be provided—
- (a) appropriate changing rooms for persons at work if they have to wear special work clothes and if, for reasons of health or propriety, they cannot be expected to change in another area, which are—

- (i) easily accessible,
    - (ii) of sufficient capacity, and
    - (iii) provided with seating,
  - (b) separate changing rooms or separate use of changing rooms for men and women, and
  - (c) adequate provision for drying wet or damp work clothes.
- (2) If circumstances so require where work clothes are likely to be contaminated by dangerous substances, atmospheric conditions or the conditions of the place of work, the operator shall provide, or cause to be provided, facilities in changing rooms to enable working clothes to be kept in a place separate from personal clothing and effects.
- (3) If changing rooms are not required as referred to in paragraph (1), the operator shall ensure that every person at work is provided with a place to store his or her own clothes and personal effects.

*Washing facilities.*

62. (1) The operator shall ensure that adequate and suitable facilities for washing appropriate to the numbers of persons at work and the duration of the work are provided at the quarry, including-
- (a) adequate troughs or washbasins having in every case a smooth impervious internal surface,
  - (b) adequate and suitable means of cleaning and drying, being either soap and towels or other means, as the case may require, and
  - (c) a sufficient supply of hot and cold or warm running water.
- (2) The operator shall ensure that—
- (a) washing facilities provided are conveniently accessible from the accommodation for taking meals and are adequately lighted, properly ventilated and are kept in a clean and orderly condition,
  - (b) provision is made for separate washbasins, or separate use of washbasins for men and women when so required for reasons of propriety,
  - (c) suitable showers in sufficient numbers are provided for persons at work, if required by the nature of the work or for health reasons,
  - (d) provision is made for separate shower rooms or separate use of shower rooms for men and women,
  - (e) the shower rooms are sufficiently large to permit each person to wash without hindrance in conditions of an appropriate standard of hygiene and such showers are equipped with hot and cold running water, and
  - (f) where the rooms containing showers or washbasins are separate from changing rooms, there is easy access between the two.

*Sanitary conveniences.*

63. (1) The operator shall ensure that adequate and suitable sanitary conveniences appropriate to the number of persons at work at the quarry are provided.
- (2) The operator shall ensure that—
- (a) every sanitary convenience, other than a convenience suitable only as a urinal, has a proper door fastening and is partitioned off to secure privacy,
  - (b) every sanitary convenience required to be provided is sufficiently ventilated and does not communicate with any workroom or mess room except through the open air or through an intervening ventilated space,
  - (c) every sanitary convenience is under cover,
  - (d) the sanitary conveniences are so arranged as to be conveniently accessible to

- persons at work at all times while they are at the quarry and are, where practicable, convenient to the washing facilities,
- (e) provision is made for separate sanitary conveniences or separate use of sanitary conveniences for men and women, and
  - (f) every sanitary convenience is maintained in a clean and hygienic condition.

*Safe access to places where facilities are provided.*

64. The operator shall ensure that—

- (a) safe means of access and egress is provided and maintained to and from every place at which any facilities provided in accordance with this Part are situated, and
- (b) every such place is made and kept safe for persons using such facilities.

*Pregnant women and nursing mothers.*

65. The operator shall provide that pregnant, postnatal and breastfeeding employees are able to lie down to rest in appropriate conditions.

*Persons with disabilities.*

66. The operator shall, where necessary, ensure that a quarry is organised to take account of persons at work with disabilities, in particular as regards doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by those persons.

*Rest rooms.*

67. The operator shall ensure that—

- (a) where necessary, and in particular, where the number of persons at work requires it, they are provided with an easily accessible rest room,
- (b) rest rooms are large enough and equipped with tables, and with seats with backs, adequate for the number of persons at work, and
- (c) if working hours are regularly and frequently interrupted and there is no specific rest room, other rooms are provided in which persons at work can stay during such interruptions, where this is required for their safety or health.

SCHEDULE 1

QUARRIES SKILLS CERTIFICATION SCHEME

1. (1) The requirement for the issue of a FETAC award under the Quarries Skills Certification Scheme (referred to in this Schedule as the "Scheme") is successful completion of training under the Scheme in any of the following tasks:
  - (a) slinging and signalling;
  - (b) telescopic handler operation;
  - (c) tractor and dozer operation;
  - (d) mobile crane operation;
  - (e) crawler crane operation;
  - (f) articulated dumper operation;
  - (g) site dumper operation;
  - (h) 180° excavator operation;
  - (i) mini-digger operation — where the person has not been trained in the task referred to at subparagraph (h);
  - (j) 360° excavator operation;
  - (k) rigid dump truck operation;
  - (l) front end loader operation;
  - (m) explosives storekeeping;
  - (n) shotfiring;
  - (o) explosives supervision;
  - (p) such other quarrying-related tasks as may be prescribed by the Minister.
- (2) Where it is necessary to gain experience prior to undertaking a programme related to the tasks listed at subparagraph (1) it is permissible for a person to undertake those tasks during the training period required by the programme if—
  - (a) the person concerned is under the supervision of a competent person, and
  - (b) the person concerned is in possession of an appropriate identification which identifies the person as a trainee for the purpose of gaining experience and competence in the area in which the person is undergoing training.
2. The requirements for the issue of a valid quarries skills registration card under the Scheme are successful completion of—
  - (a) the relevant FETAC award under the Scheme,
  - (b) an equivalent FETAC award, or
  - (c) an equivalent award approved by a body in another Member State of the European Communities recognised by SOLAS as equivalent to the FETAC award under the Scheme.

MACHINERY SUBJECT TO REGULATION 22(2)(e)

<b>Machine Type</b>
Off-road dump trucks (trailer to rear of driver), payload greater than 7 Tonnes
Dumpers (front tip) no cab
Dumpers (front tip) with cab
Wheel loaders (loading shovels), including skid steer loaders
All 180° Excavators
All 360° excavators
Scrapers
All tracked type tractors (bulldozers)
Graders
Telescopic handlers

GEOTECHNICAL ASSESSMENTS

*Excavation, tip or lagoon.*

In this Schedule “excavation, tip or lagoon” includes, where appropriate, a proposed excavation, tip or lagoon.

DOCUMENTS AND PARTICULARS TO BE INCLUDED IN GEOTECHNICAL ASSESSMENT

*Site survey.*

1. An accurate plan on a scale not less detailed than 1:2,500 showing—
  - (a) the boundaries of the quarry upon which the excavation, tip or lagoon is or is to be situated,
  - (b) the site of the excavation, tip or lagoon,
  - (c) any contiguous land or structure that might be affected by the excavation, tip or lagoon,
  - (d) buried quarry workings, known cave systems, active or former land-slips, springs, artesian wells, watercourses, mine workings (whether in use or not) and other natural or man-made features, including tunnel pipes or culverts that may —
    - (i) affect the safety of the excavation, tip or lagoon, or
    - (ii) be relevant for the purpose of determining whether quarrying operations can be carried out safely.

This plan shall be contoured, orientated and correlated to the Ordnance Datum Survey National Grid at a vertical interval not greater than 5 metres and marked with squares corresponding to the 100 metre squares shown on Ordnance Survey sheets on the scale of 1:2,500.

*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 1:1,250 of the site of the excavation, tip or lagoon showing the existing ground surface and all relevant superficial materials and bedrock underlying the 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 man-made, that may affect the safety of the excavation, tip or lagoon.

*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 that may affect the safety of the excavation, tip or lagoon.

*Assumptions made before analysis.*

5. A record of any assumptions relevant to the assessment of ground conditions relating to the safety of the excavation, tip or lagoon made by the geotechnical specialist, including a record of any relevant information that 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, tip or lagoon, 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 1:2,500 recording—
  - (a) in relation to an excavation, 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, and
  - (b) in relation to a tip or lagoon, the design of the tip or lagoon, including the area of land covered or to be covered, the gradients of that land, the designed contours at vertical intervals of not more than 2 metres, the side slopes and boundaries of the tip or lagoon and the designed position and nature of construction of any wall or other structure retaining or confining the tip, or lagoon.

*Requirements during and after quarrying operations.*

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

SCHEDULE 4

NOTIFICATIONS AND APPROVED FORMS

**AF1 REGULATION 7**

NOTIFICATION OF APPOINTMENT OR CHANGE OF OPERATOR OR COMMENCEMENT, PERMANENT OR TEMPORARY CESSATION OF QUARRYING OPERATIONS	
I hereby give notice of (delete as appropriate)	<ul style="list-style-type: none"> <li>• Appointment/Change of Operator</li> <li>• Commencement/Recommencement of Quarrying Operations</li> <li>• Temporary Cessation of Quarrying Operations</li> <li>• Permanent Cessation of Quarrying Operations</li> </ul>
Name of Person or Company under which the business is carried on	
Name of Operator	
Signature of or on behalf of Operator	
Name and Address of Quarry	
Townland and Place Where Quarry is situated	
OS Grid References:	
Telephone Number	
Fax Number/ E-Mail Address	
Date when operations are to Commence/Cease	
Date Change/Appointment of Operator is to take effect	

**Results of Inspection & Thorough Examination of Personal Flotation Devices**

**NOTE:** This form is to be used to record the inspection and thorough examination of personal flotation devices (PFD). The inspection of the personal flotation devices must be undertaken in accordance with the manufacturer's instructions. The thorough examination needs to be undertaken at least every 12 months. The thorough examination is in addition to the requirement for inspections. Indicate the name of the person for whom the report has been prepared. The approved form may be stored in a computer and duly authenticated as soon as is practicable afterwards.

Name of Employer or Contractor:	
Address of Registered Office:	
Address of Quarry:	

	Description of equipment inspected / examined, with serial number or reference number	Date of inspection / thorough examination	Results of inspection / thorough examination State condition of personal flotation device(s)	Comments or action taken	Name (in block capitals) and signature of person who undertook inspection / thorough examination
I <input type="radio"/>					
E <input type="radio"/>					
I <input type="radio"/>					
E <input type="radio"/>					
I <input type="radio"/>					
E <input type="radio"/>					
I <input type="radio"/>					
E <input type="radio"/>					
I <input type="radio"/>					
E <input type="radio"/>					
I <input type="radio"/>					
E <input type="radio"/>					
Note	I = Inspection	E = Thorough Examination	See Further Notes overleaf		



**NOTES:**

**General:**

1. This form contains the report of the results of inspections and thorough examination of Personal Flotation Devices.
2. Personal Flotation Devices must be Inspected in accordance with the manufactures instructions.
3. Personal Flotation Devices must be Thoroughly Examined every 12 months.
4. The report must be signed by the person making the Inspection or Thorough Examination.
5. The Report shall be kept at the quarry whilst relevant work is being carried out.
6. If it is not possible to retain the report at the quarry it should be kept at the registered office of the operator, or where the operator is an individual, at his or her place of business,
7. Regulation 18(2)(a) provides as follows:- where under these Regulations records, reports, or other documents are required to be made, it is sufficient compliance with the requirement if the operator and, where appropriate, other person concerned—
  - (a) make and maintain the record, report or other document by electronic means, and
  - (b) duly authenticate it as soon as is practicable afterwards.
8. Regulation 27(4) provides as follows:- The operator shall ensure that personal flotation devices provided under this Regulation are—
  - (a) properly maintained,
  - (b) checked before each use,
  - (c) inspected in accordance with the manufacturer's instructions, and
  - (d) subjected to a thorough examination by a competent person every 12 months.
9. Regulation 27(5) provides as follows:- On the day of an inspection or examination under paragraph (4), the person who carries out the inspection or examination, as the case may be, shall –
  - (a) make a report of the results in an approved form,
  - (b) sign the report.
  - (c) give a copy of the report to the operator.