



STATUTORY INSTRUMENTS.

S.I. No. 133 of 2018



SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018

S.I. No. 133 of 2018

SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018

ARRANGEMENT OF REGULATIONS

PART 1

PRELIMINARY AND GENERAL

1. Citation and commencement
2. Interpretation
3. Mine
4. Application
5. Amendment of Safety, Health and Welfare at Work (Extractive Industries) Regulations 1997

PART 2

SAFETY AND HEALTH MANAGEMENT

6. Appointment of operator
7. Appointments before commencement of mining operations
8. Notifications to Authority
9. General duties of operator
10. Management structure
11. General duties of mine manager
12. Safety statement
13. Co-ordinated measures
14. Mines training scheme, safety induction instruction and competence
15. Appointment of shiftboss
16. Duties of shiftboss
17. Instructions, rules and operating procedures
18. Permits to work
19. Duties of persons at work at a mine
20. Mine safety representative
21. Consultation

22. Record keeping

PART 3

INSPECTION AND SUPERVISION

23. Inspection, maintenance and testing schemes
24. Supervision of work
25. Carrying out and recording of inspections required by Regulation 16
26. Other inspections

PART 4

ROADWAYS AND VEHICLES

27. Construction and equipment of vehicles
28. Inspection and maintenance of vehicles
29. Appointment of drivers
30. Carrying of passengers
31. Roadway surfaces
32. Roadway clearances
33. Gradients
34. Safety of pedestrians in roadways
35. Vehicle and traffic rules
36. Safeguarding edges of excavations and lagoons
37. Danger areas
38. Pedestrian and Vehicle Traffic routes
39. Outdoor workstations
40. Protection from falling objects and provision of safety helmets
41. Prevention of drowning

PART 5

VENTILATION

42. Duty to provide adequate ventilation
43. Main ventilation fans
44. Additional underground fans

- 45. Auxiliary ventilation
- 46. Prevention of leakage
- 47. Ventilation rules

PART 6

STABILITY AND GROUND SUPPORT

- 48. General duty to ensure safety of excavations, tips and lagoons
- 49. Operating procedures for excavations, tips and lagoons
- 50. Appraisal and site investigation of excavations, tips and lagoons
- 51. Geotechnical assessments
- 52. Stability of roadways and places of work
- 53. Duty to inspect place of work
- 54. Scaling of roof and sides
- 55. Working at or near unsupported stopes
- 56. Use of backfill as a means of support
- 57. Ground support rules

PART 7

EXPLOSIVES

- 58. Application of Part 7
- 59. Shotfirers and storekeepers
- 60. Scheme of transit
- 61. Storage, transport, use and disposal of explosives or ANBI
- 62. Shotfiring rules
- 63. Blast specification.
- 64. Shotfiring operations
- 65. Duties of mine manager and shotfirer
- 66. Misfires
- 67. Prohibited activities
- 68. Records of explosives and ANBI

PART 8

ELECTRICITY

69. General
70. Protection of cables and use of portable equipment
71. Introduction of electrical equipment
72. Restriction of certain categories of electrical equipment in certain zones below ground
73. Cutting off electricity or making safe where flammable gasses are found
74. Means of cutting off electricity to circuits below ground
75. Schematic diagrams
76. Electric shock notices
77. Storage, charging and transfer of electrical storage batteries
78. Leakage protection
79. Reportable incidents

PART 9

ACCESS, EGRESS AND EMERGENCY PLANNING

80. Outlets and workings
81. Ladderways between working levels
82. Entrances to shafts, stopes and other openings
83. Escape and rescue facilities
84. Safety drills
85. Fire and explosion hazards
86. Explosive or harmful atmospheres
87. Lighting
88. Prevention of unauthorised entry
89. Means of evacuation
90. Underground workforce accounting
91. Precautions for withdrawal of employees
92. Precautions against external dangers to workings

6 [133]

93. Precautions against the outbreak of fire
94. Warning of emergencies
95. Refuge stations
96. Rescue teams
97. Composition of rescue teams
98. Training of rescue workers
99. Equipment to be provided for rescue work
100. Fresh air base
101. Rescue plans
102. Incident controller
103. Emergency rules and procedures

PART 10

PREPARATION OF MINE PLANS

104. Appointment and qualifications of mine surveyor
105. Duties of the mine surveyor
106. Scale, datum and other details required on plans
107. Additional plans
108. Keeping of plans
109. Defective Plans

PART 11

PROVISIONS RELATING TO HOISTING SYSTEMS

110. Appointment of hoistman
111. Hoisting rules
112. Hoist controls, instrumentation and position indicators
113. Braking systems

PART 12

PROVISION FOR PARTICULAR RISKS AT MINES

114. Protection from explosion risks
115. Gassy mines

- 116. Mines containing flammable dust
- 117. Protection from incendive sparking at gassy mines or mines containing flammable dust
- 118. Fires, spontaneous combustion and heatings
- 119. Gas outbursts, rock bursts and water inrushes
- 120. Protection from harmful environments

PART 13

SAFETY PROVISIONS FOR ANCILLARY SURFACE INSTALLATIONS

- 121. Definition of “place of work” (Part 13)
- 122. Stability and solidity
- 123. Floors, walls and ceilings of rooms
- 124. Room dimensions, air space in rooms and freedom of movement at work-stations
- 125. Roofs, windows and skylights
- 126. Doors and gates
- 127. Ventilation in rooms
- 128. Temperature in rooms

PART 14

HEALTH

- 129. Health surveillance
- 130. Medical Examinations
- 131. Health hazards
- 132. Atmospheric influences
- 133. Stationary internal combustion engines and exhaust gases

PART 15

WELFARE

- 134. Shelters and accommodation for clothing and taking meals
- 135. Changing rooms and lockers
- 136. Washing facilities
- 137. Sanitary conveniences

8 [133]

138. Safe access to places where facilities are provided

139. Pregnant women and nursing mothers

140. Persons with disabilities

141. Rest rooms

SCHEDULE 1

NOTIFICATIONS TO AUTHORITY

SCHEDULE 2

INSPECTION REPORT FORMS

SCHEDULE 3

GEOTECHNICAL ASSESSMENTS

S.I. No. 133 of 2018

SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018

I, Pat Breen, Minister of State at the Department of Business, 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 Jobs, Enterprise and Innovation (Alteration of Name of Department and Title of Minister) Order 2017 (S.I. No. 364 of 2017)) and the Business, Enterprise and Innovation (Delegation of Ministerial Functions) Order 2017 (S.I. No. 569 of 2017), and for the purpose of giving further effect to Council Directive 92/104/EEC of 3 December 1992¹, after consultation with the Health and Safety Authority, hereby make the following regulations:

PART 1

PRELIMINARY AND GENERAL

Citation and commencement

1. (1) These Regulations may be cited as the Safety, Health and Welfare at Work (Mines) Regulations 2018.

(2) These Regulations shall come into operation on 30 April 2018.

Interpretation

2. (1) In these Regulations—

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

“Act of 1875” means the Explosives Act 1875 (38 & 39 Vict.) c. 17;

“ANBI” means a substance assigned for the time being as ammonium nitrate blasting intermediate in accordance with U N Recommendation 3375 (being one of the UN Recommendations);

“ancillary surface installation” means any surface installation housing a workstation which is essential to the operation of an underground mine and includes facilities for crushing, screening and sizing processes, surface stores and magazines, surface ventilation fan installations and airlocks, tailings management facilities, stockpiles and tips, but excludes facilities for milling of ore, chemical or thermal processing of ore, surface workshops or offices;

“ANFO” means an explosive material consisting of ammonium nitrate and fuel oil;

¹OJ No. L404, 31.12.1992, p. 10.

*Notice of the making of this Statutory Instrument was published in
“Iris Oifigiúil” of 1st May, 2018.*

“appoint” means appoint a person in writing to perform the duties to which the appointment relates;

“Authority” means the Health and Safety Authority;

“auxiliary fan” means a fan used or intended to be used below ground in a mine wholly or mainly for ventilating a heading, drift or blind end;

“blasting explosive” means a mixture intended for blasting consisting substantially of inorganic nitrates and carbonaceous combustibles in which none of the ingredients is an explosive and which, when unconfined is not cap sensitive;

“blind end” means a short roadway in a mine extending no further than 15 metres;

“breathing apparatus” means apparatus of such a character that it supplies all the requirements of respiration by itself and is independent of the surrounding atmosphere;

“cap sensitive” means an explosive which gives a positive result when tested in accordance with the edition for the time being of the test known as the Series 5(a) test of the Manual of Test and Criteria, supporting the UN Recommendations;

“charge” means explosive which may be initiated by a single detonator or a blasting explosive which may be initiated by a combined primer and detonator;

“conductor” means a conductor of electrical energy;

“detonator” means an initiator for explosives that contains a high explosive initiated by means of a flame, spark, electric current or shock tube;

“detonator reserve station” means a suitable place below ground used exclusively for the storage of detonators which shall be a safe distance away from any other store, magazine or reserve station;

“detonator store” means a store used exclusively for the storage, in bulk, of detonators which shall be apart from any other store, magazine or reserve station;

“disused workings” means a place at a mine where extraction of mineral has ceased or been abandoned and in respect of which the mine owner has no immediate plans to recommence the extraction of mineral;

“drift” has the same meaning as “heading”;

“electrical equipment” includes any conductor or electric cable and any part of any machine, apparatus or appliance, intended (in any case) to be used or installed for use for the generation, transformation, conversion, switching,

controlling, regulating, rectification, storage, transmission, distribution, provision, measurement or use of electrical energy;

“electrical installation” means an assembly of associated electrical equipment fulfilling a specific purpose or purposes and having coordinated characteristics;

“excavation” means any place at a mine where minerals or their surrounding materials are being or have been extracted and includes the roof, floor, faces or sides of that place;

“exploder” means a device designed for firing detonators;

“explosive” means an explosive within the meaning of the Act of 1875 and includes any explosive article or substance which would—

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

“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 vehicle” has the meaning assigned to it by Regulation 60;

“fresh air base” has the meaning assigned to it by Regulation 100;

“gas” includes fume or vapour;

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

“geotechnical assessment” has the meaning assigned to it by Regulation 51;

“geotechnical specialist” means a professional engineer or geologist who is competent to perform a geotechnical assessment under Part 6;

“heading” means a horizontal or inclined underground opening to facilitate the working of the mine;

“hoistman” has the meaning assigned to it by Regulation 110;

“hoisting rules” has the meaning assigned to it by Regulation 111;

“inspection” means an inspection by a competent person which shall be visual, or more rigorous than visual, as the competent person shall have determined as being appropriate;

“intake airway” means an excavation below ground through which fresh air is drawn or forced into a mine or a section of a mine;

“lagoon” means any natural or artificial pond or tailings management facility pond (including any water-filled excavation) used in connection with mining 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 mine where waste water, sludge, tailings and liquid waste accumulate or are stored;

“locomotive” means a mechanically propelled vehicle running on rails, constructed or used for hauling other vehicles;

“magazine” means a magazine licensed under section 8 of the Act of 1875;

“mechanically propelled vehicle” means a wheeled or tracked mechanically driven mobile plant (including mobile plant used for the loading, transporting or haulage of minerals or materials or for the carriage of persons) which forms part of the equipment of the mine and does not include a locomotive;

“mine” has the meaning assigned to it by Regulation 3;

“mine manager” means an individual appointed under Regulation 10;

“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;

“mine owner” means, in relation to a mine, the person for the time being entitled to work it;

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

- (a) testing before firing reveals broken continuity which 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 mine, means a person who has been appointed under Regulation 6;

“orepass” means a short shaft through which minerals are passed for purposes of loading at a lower level of a mine;

“outlet” means an opening from underground in a mine to the surface;

“place of transfer” means a safe and secure place on the surface, designated by the operator for the transfer of explosives and ANBI from delivery vehicles to explosives vehicles for immediate conveyance to an underground store, magazine, or reserve station or working area for immediate use;

“public road” has the meaning assigned to it by the Roads Act 1993;

“raise” means a vertical or inclined shaft which is excavated from below;

“refuge station” has the meaning assigned to it by Regulation 95;

“reserve station” means a suitable place below ground for the issue, return and temporary storage of explosives or ANBI, which is situated at a safe distance away from any other store, magazine or reserve station;

“rescue plan” has the meaning assigned to it by Regulation 101;

“rescue team” has the meaning assigned to it by Regulation 96;

“retraining” means the acquisition of necessary skills in one or more operations concerned with the operation of a mine by a person who has undergone previous training in such operation or operations;

“return airway” means an excavation below ground where the air contained within has passed through one or more working faces;

“roadway” means a road below ground in a mine in which persons travel or in which vehicles, including locomotives, operate and includes part of a road but does not include an unwalkable outlet;

“scheme of transit” has the meaning assigned to it by Regulation 60;

“self rescue respiratory device” means a device which enables a person to withdraw in safety from a place where there is a toxic or irrespirable atmosphere;

“shaft” includes a staple-pit, orepass, raise or any similar excavation (whether sunk or in the course of being sunk);

“shiftboss” means a person who is appointed as a shiftboss at a mine under Regulation 15;

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

“shotfirer” means a person appointed under Regulation 59;

“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, including the manufacture of blasting explosives by blending ANBI and a sensitiser;
- (d) priming a cartridge;
- (e) charging and stemming a shothole, includes pumping mixed ANFO, ANBI and a sensitiser, into shotholes using underground pumping units;
- (f) linking or connecting a series of shots;
- (g) withdrawing and sheltering of persons;
- (h) inspecting and testing a shotfiring circuit;
- (i) firing a shot;
- (j) checking for misfires;
- (k) destroying surplus explosives;

“shotfiring rules” means rules prepared under Regulation 62;

“staple-pit” means a short shaft used for storage of minerals;

“stope” means an excavation, made in a mine to remove minerals, which has been rendered accessible by the development of shafts and drifts;

“store” means a store licensed under section 15 of the Act of 1875;

“storekeeper” means a person appointed under Regulation 59;

“surveyor” has the meaning assigned to it by Regulation 104;

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

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

“UN Recommendations” means the recommendations for the time being prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods;

“unwalkable outlet” means an outlet through which, owing to the gradient thereof or of any part thereof, (whether alone or in combination with other circumstances), a person cannot walk with reasonable convenience;

“ventilation plan” means the ventilation plan prepared under Regulation 105 (2);

“ventilation rules” means rules prepared under Regulation 47;

“winding apparatus” means apparatus for lowering and raising loads through a mine shaft;

“working area” means all of the places of work below ground in a mine in which workers in the charge of a shiftboss are deployed by him or her for the performance of their duties (including an area of responsibility or district, where arrangements are in place at the mine to delineate such areas of responsibility or districts) and includes any immediate means of access or egress thereto;

“working face” means a place where mineral is won from a mine;

“working plan” means the working plan prepared under Regulation 105(3);

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

(2) Any diagrams, drawings, instructions, operating procedures, plans, reports, rules or schemes (other than plans, records, reports or other particulars specified in Schedule 3 for the purposes of a geotechnical assessment) required to be prepared under these Regulations, shall be so prepared for the purposes of informing a person working in a mine what is required of them for the proper performance of the work and shall be—

(a) in writing, and

(b) made available to the person working in the mine.

(3) In these Regulations, a reference to diagrams, drawings, instructions, operating procedures, plans, reports, rules or schemes (other than UN Recommendations) being prepared in relation to a mine includes, subject to Regulation 105 (3) in so far as it relates to working plans, a reference to their being reviewed or amended as the development or operation of the mine progresses, or for such other purpose as the person responsible for that preparation considers appropriate.

(4) A word or expression that is used in these Regulations and is also used in Council Directive 92/104/EEC of 3 December 1992¹ has, unless the contrary intention appears, the same meaning in these Regulations as it has in the Directive.

Mine

3. In these Regulations “mine” includes any of the following:

(a) an excavation or system of excavations made for the purpose of or in connection with the underground extraction of minerals;

¹OJ No. L404, 31.12.1992, p. 10.

- (b) ancillary surface installations including the preparation of minerals so extracted for sale, other than the activity of any manufacturing process of those materials;
- (c) any tip or lagoon used in connection with the extraction of minerals from the mine;
- (d) any railway or siding at the mine used in connection with the extraction of minerals from the mine;
- (e) any road on the surface of the mine, other than a public road, used in connection with the extraction of minerals from the mine;
- (f) any conveyor, pipeline or means of conveyance, other than by transport on a public road, used for extraction of minerals or transport of waste materials to a tip, stockpile or lagoon.

Application

4. (1) These Regulations apply to all mines other than a mine referred to in paragraph (2).

(2) These Regulations shall not apply to a mine in relation to which—

- (a) notice of permanent cessation of mining operations has been given to the Authority under Regulation 8, and
- (b) all work relating and incidental to that cessation has been completed, including work for the purpose of preventing unauthorised entry into the mine and the escape from that mine of water or other substance that flows when wet.

(3) In relation to a mine, these Regulations apply in addition to, and not in substitution for, the relevant statutory provisions.

Amendment of Safety, Health and Welfare at Work (Extractive Industries) Regulations 1997

5. The Safety, Health and Welfare at Work (Extractive Industries) Regulations 1997 (S.I. No. 467 of 1997) are amended by the insertion of the following Regulation after Regulation 3A:

“Non-application to mines

3B. Notwithstanding Regulations 2(1) and 3, these Regulations shall not apply to a mine within the meaning of the Safety, Health and Welfare at Work (Mines) Regulations 2018.”.

PART 2

SAFETY AND HEALTH MANAGEMENT

Appointment of operator

6. (1) Before the commencement of operations at a mine the mine owner shall appoint a person who is competent to perform the functions of an operator under these Regulations to be the operator of the mine.

(2) Where the mine owner is an individual who is competent to perform the functions of an operator under these Regulations, he or she may appoint himself or herself to be the operator of the mine.

(3) Where the mine owner appoints another person to be the operator of the mine under paragraph (1), both parties shall sign the record and the mine owner shall provide a copy of the signed record to the operator.

(4) The original record and a signed copy of it shall be kept by the mine owner and the operator, respectively, for a period of 6 years from the termination of the operator's appointment as operator of the mine.

(5) The mine 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 mine.

Appointments before commencement of mining operations

7. A person shall not be deployed to perform mining operations at a mine unless an operator, a mine manager and an adequate number of shiftbosses have been appointed.

Notifications to Authority

8. (1) The operator shall furnish, or cause a notice in writing to be furnished to the Authority not later than 10 working days following the occurrence of any of the following events in respect of the mine:

- (a) his or her appointment as an operator;
- (b) the appointment of a mine manager or a temporary mine manager where there is an unplanned absence of the mine manager;
- (c) the commencement of mining operations;
- (d) the permanent cessation of mining operations.

(2) A notice under paragraph (1) shall be in the Form MR 1 specified in Schedule 1.

(3) In respect of any of the following dangerous occurrences at a mine, the operator shall, unless paragraph (4) applies, as soon as practicable following the occurrence notify, and in any case not later than 10 working days following that occurrence give notice in writing to, the Authority:

- (a) a gas, other than gas in a safety lamp or other controlled use, or dust is ignited below ground;
- (b) a fire breaks out below ground;
- (c) a person, in consequence of smoke or any other indication that a fire may have broken out below ground, has been caused to leave any working area;
- (d) a fire breaks out on the surface endangering the operation of—
 - (i) any winding or haulage apparatus installed either at or in a shaft of the mine or at or in an unwalkable outlet from the mine, or
 - (ii) any mechanically operated apparatus for producing ventilation below ground in the mine;
- (e) there is a violent outburst of gas, or solid matter into the mine workings which is not caused intentionally;
- (f) there is an inrush of noxious or flammable gas with the potential to injure;
- (g) there is an inrush of water, unintended release of backfill or the inrush of any material which flows;
- (h) a rope, chain, coupling or other gear of similar kind, by means of which persons are carried through a shaft or unwalkable outlet, breaks;
- (i) a rope, chain, coupling or other gear of similar kind, used for the transport of persons below ground, breaks;
- (j) a cage used for the carriage of persons is overwound while being so used;
- (k) a cage not being used for the carriage of persons is overwound and becomes detached from its winding rope;
- (l) a cage operated by means of the friction of a rope on a winding sheave is brought to rest by the apparatus provided for bringing the cage to rest in the event of its being overwound (such apparatus being sited either in the headframe of the relevant shaft or in the part of such shaft which is below the lowest landing for the time being in use);
- (m) any ventilating apparatus breaks down thereby causing a substantial reduction in the ventilation of the mine causing a risk or potential risk to the safety, health or welfare of a person;
- (n) any headframe, winding engine house, screen house, or tippler house collapses;

- (o) breathing apparatus, a smoke helmet, self-rescuer or other apparatus serving the same purpose, while being used, fails to function safely or develops a defect likely to affect its safe working;
- (p) immediately after using and arising out of the use of apparatus referred to in subparagraph (o) a person receives first aid or medical treatment at the mine for resulting unfitness or suspected resulting unfitness;
- (q) an unintentional ignition or explosion of ANBI;
- (r) a person, as a result of an explosion or discharge of any blasting material or device, suffers bodily injury and receives first aid or medical treatment at the mine;
- (s) there is any movement of material, a fire or any other event indicating either that an accumulation or deposit of refuse, or that a settling pond forming part of the mine, is unstable or is likely shortly to become unstable;
- (t) the uncontrolled movement, collision or runaway of any vehicle;
- (u) any accidental collision between a locomotive or a train or other vehicle;
- (v) a fall of ground causing a risk or potential risk to the safety, health or welfare of a person.

(4) No notice of a dangerous occurrence referred to in paragraph (3) is required under that paragraph where there is a requirement under the General Application Regulations to furnish a report to the Authority of the dangerous occurrence by reason of a death or injury having occurred.

(5) A notice under paragraph (3) shall be in the Form MR2 specified in Part 2 of Schedule 1.

General duties of operator

9. (1) The operator, so far as is reasonably practicable, shall ensure that—
- (a) (i) the mine is designed, constructed, equipped, commissioned, operated and maintained, and
 - (ii) any machinery, tool or other article used at work there is, 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) (ii) is located in an area of the mine 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 mine are of adequate strength and free from patent defect and suitable for the purpose for which they are intended, and
 - (d) electrical equipment and plant at the mine are of sufficient capacity for the purpose for which they are intended.
- (2) The operator shall ensure that—
- (a) all work is planned and carried out 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 mine, including working faces, excavations and other areas, is designed and laid out as appropriate to the nature and stability of the ground and the methods of working,
 - (ii) mine workings, pillars, 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, that the roofs, floors and sides of work areas and haul roads are checked for loose ground or rocks and scaling is carried out where necessary, and
 - (iv) excavations and tips are not worked in such a way that instability is created,
 - (b) all activities at the mine are organised so—
 - (i) as to provide adequate protection against hazards, and
 - (ii) as not to endanger the safety and health of persons at work,
 - (c) workstations are designed and constructed according to ergonomic principles taking into account the need for persons at work to perform 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 mining operations, the mine is left, so far as is reasonably practicable, in a safe condition.

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

(4) In this Regulation “haul road” means a road designed and built to carry heavily loaded trucks or equipment.

Management structure

10. (1) The operator shall establish a management structure and—

(a) shall appoint

- (i) a person who is competent to perform the functions of a mine manager to be the mine manager, or
- (ii) where he or she is competent to perform the functions of a mine manager, himself or herself to be the mine manager, and

(b) shall appoint a person (including, where he or she is competent to perform the functions of a mine manager, himself or herself) who is competent to perform the functions of the mine manager to be the temporary mine manager where there is an unplanned absence of the mine manager.

(2) The operator shall appoint shotfirers and trainee shotfirers.

(3) The operator shall appoint an adequate number of shiftbosses, supervisors, officials, engineers, technicians and other competent persons—

- (a) to enable the mine to be inspected, operated and managed safely and in accordance with the safety statement,
- (b) to supervise persons under their control at work at the mine,
- (c) to supervise persons engaged in work activities involving serious risk to safety and health as identified in the safety statement, and
- (d) to visit workstations occupied by persons under their control at the mine at least twice during an 8 hour working period or such other frequency specified in the safety statement.

(4) A mine manager shall—

- (a) manage the operation of the mine at all times when persons are working in the mine,

- (b) other than where the mine manager is the operator, advise the operator as to compliance with the requirements of the relevant statutory provisions, and
- (c) exercise a general supervision of the compliance with those requirements and the promotion of the safe conduct of work generally.

(5) The operator shall ensure that the management structure is regularly reviewed and shall where necessary, particularly if the mine undergoes significant changes (including natural changes), extensions or conversions, revise the management structure.

(6) The operator shall ensure that each person who is part of the management structure at the mine is provided with the part or parts of the safety statement that describes the person's authority and function.

General duties of mine manager

11. (1) The mine manager shall so far as is reasonably practicable—

- (a) manage and control all work activities at the mine, either directly or through his or her appointed shiftbosses, supervisors and other officials,
- (b) discharge any duties given to him or her by the operator,
- (c) ensure compliance with all instructions, rules and operating procedures relating to the mine prepared by the operator,
- (d) ensure that self-rescue respiratory devices are provided where necessary to each person employed below ground,
- (e) ensure compliance with the systems of workforce accounting referred to in Regulation 90, and
- (f) appoint a competent person or persons to act, as necessary, as substitute manager for any planned periods of his or her absence from the mine.

(2) In performing his or her functions under these Regulations, the mine manager shall comply with, and shall require all other persons working at the mine to comply with all instructions, rules and operating procedures at the mine prepared by the operator.

Safety statement

12. (1) In preparing or causing to be prepared a safety statement under section 20 of the Act of 2005, or in reviewing or amending the safety statement under that section, the operator shall include the—

- (a) management structure and appointments referred to in Regulation 10 setting out the duties and responsibilities of each person in the management structure,
- (b) mines training scheme required under Regulation 14,
- (c) operating procedures and instructions required under Regulation 17(a), relating to the safety and health of persons at work at the mine in both normal and critical situations there,
- (d) system of permits to work, if required under Regulation 18,
- (e) inspection, maintenance and testing schemes prepared under Regulation 23,
- (f) vehicles and traffic rules prepared under Regulation 35,
- (g) operating procedures for excavations, tips and lagoons prepared under Regulation 49,
- (h) conclusions of any appraisal, site investigation or geotechnical assessment of an excavation, tip or lagoon under Regulation 50 or 51,
- (i) ground support rules prepared under Regulation 57,
- (j) shotfiring rules,
- (k) instructions concerning use of emergency equipment prepared under Regulation 83(c),
- (l) details of a fire protection plan including the means of escape referred to in Regulation 83 and communications and warnings referred to in Regulation 84,
- (m) hoisting rules, and
- (n) arrangements for health surveillance under Regulation 131.

(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 mine from the risk of explosion or fire in accordance with Regulations 85 and 86(1),
- (b) where toxic gases are or may be present in the atmosphere at the mine 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 mine from the harmful atmosphere in accordance with Regulation 86(2), and
- (c) a diagram of the mine indicating those areas in respect of which plans referred to in subparagraph (a) or (b) apply.

(3) The operator shall ensure that—

- (a) all measures required under the safety statement to be taken are taken,
- (b) any plans included in the safety statement are followed, and
- (c) each person in the management structure referred to in Regulation 10 shall perform the duties assigned to him or her in the safety statement so as to protect the safety, health and welfare of persons at work at the mine.

Co-ordinated measures

13. (1) The operator shall co-ordinate the implementation of all measures relating to the safety, health and welfare of persons at work at the mine.

(2) Every employer of persons at work at a mine and every person at work at a mine shall co-operate with the mine operator to the extent necessary to enable the mine operator to comply with the relevant statutory provisions.

Mines training scheme, safety induction instruction and competence

14. The operator shall ensure that—

- (a) a training scheme is prepared for the mine, in this Regulation referred to as a “mines training scheme”,
- (b) a training officer is appointed to oversee the implementation of the mines training scheme,
- (c) a record is kept by the training officer, in accordance with Regulation 22, of the implementation of the mines training scheme, training, any re-training given and the issue of each certificate of appointment to each person employed at the mine,
- (d) any person undertaking work at the mine—
 - (i) has received appropriate site-specific safety induction instruction,
 - (ii) 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,
 - (iii) has been given the necessary training or re-training in accordance with the mines training scheme, and
 - (iv) shall be entitled at all reasonable times to inspect his or her personal training record.

Appointment of shiftboss

15. (1) The operator shall appoint a person to be a shiftboss and issue a certificate of appointment to that person provided that the person—

- (a) has not less than three years appropriate practical underground experience in one or more mines,
- (b) is an occupational first aider (within the meaning of Regulation 163 of the General Application Regulations),
- (c) has received training in shotfiring operations, and
- (d) is competent to perform his or her duties.

(2) The operator shall not assign additional duties to a shiftboss that would prevent him or her from carrying out his or her duties under Regulation 16.

Duties of shiftboss

16. (1) A shiftboss shall, so far as is reasonably practicable—

- (a) manage and control all workers and all work activities within his or her working area or assigned area of responsibility,
- (b) discharge any duties given to him or her by the operator,
- (c) comply with all instructions, rules and operating procedures relating to the mine prepared by the operator,
- (d) within 2 hours immediately before the commencement of work in any part of his or her working area, perform or have performed by a competent person an inspection of the working area to ascertain—
 - (i) the adequacy of ventilation,
 - (ii) the presence of toxic gases,
 - (iii) the stability of roofs, floors and sides, and
 - (iv) general safety,
- (e) ensure, where there is or there has been continuous working in any part of their working area, that an inspection required under subparagraph (d) shall be made at intervals not exceeding twelve hours,
- (f) immediately following any inspection required under subparagraph (d), make a written record of that inspection,
- (g) visit or cause to have visited all working areas where persons under his or her immediate charge and direct supervision are carrying out work at intervals not exceeding four hours,
- (h) accurately ascertain, during the working period of persons under his or her immediate charge and direct supervision—

- (i) the presence of noxious gases at every place of work within his or her working area which is required to be ventilated, and
 - (ii) the condition of the ventilation to determine if it is safe and without risk to persons employed thereat;
- (i) where a place of work is found to be for the time being hazardous by reason of the presence of gas, instability of roofs, floors or sides or from any other hazard—
- (i) fence off or cause the place of work to be fenced off at each approach as to prevent any person from accidentally entering it,,
 - (ii) clearly mark or cause each fence to be clearly marked with an appropriate sign, and,
 - (iii) give details of the observed hazards in the general inspection report,
- (j) where not less than two means of egress from a working area or from any place of work therein are required, forthwith make himself or herself, all persons entering there and all persons assigned to him or her acquainted with each means of egress,
- (k) instruct that the use of machinery, apparatus or equipment which is found by him or her or reported to him or her to be in an unsafe condition is stopped,
- (l) ensure that at the end of his or her working period, all places of work where persons in his or her immediate charge are or have been working are left in a safe condition or fenced off so as to prevent inadvertent access and included in the general inspection report if required under subparagraph (i),
- (m) make, within one hour after the conclusion of their working period a written record of the work carried out by all persons under his or her immediate charge and the times of inspection or visits to them on a general inspection report,
- (n) on the conclusion of his or her working period, provide the oncoming shiftboss with all relevant information necessary for the safety and health of persons who will be employed in any working area that he or she has inspected during the course of that period,
- (o) provide, in an appropriate manner and by appropriate means all relevant information necessary for the safety and health of the persons who will be employed in any working area referred to in the inspection reports he or she prepares under these Regulations, and
- (p) prior to the commencement of any work, acquire from the vacating shiftboss all relevant information necessary for the safety and health

of persons who will be employed in any place of work under his or her control and read the vacating shiftboss's inspection reports prepared under these Regulations that relate to places of work where persons in his or her immediate charge may be carrying out work.

(2) In performing his or her functions the shiftboss shall comply with, and shall require all other persons working at the mine to comply with all instructions, rules and operating procedures relating to the mine prepared by the operator.

(3) (a) The information required under paragraph (1)(f) shall be recorded in the Form MR3 specified in Part 1 of Schedule 2.

(b) In this Regulation, a "general inspection report" means a report which shall contain information required under subparagraph (i)(iii), (l) or (m) of paragraph (1) and which shall be recorded in the Form MR4 specified in Part 2 of Schedule 2.

Instructions, rules and operating procedures

17. The operator shall ensure that—

- (a) written instructions specifying rules to be observed and operating procedures are in place at the mine with a view to securing the safety and health of persons at work and the safe use of work equipment,
- (b) all instructions, rules and operating procedures required under these Regulations relating to the mine are kept at the mine and given to any person at work at the mine to whom they apply, and
- (c) all reasonable measures are taken in order that each person at work at the mine understands the instructions, rules and operating procedures required under these Regulations relating to the mine that apply to that person.

Permits to work

18. The operator shall ensure that—

- (a) where necessary, based on an assessment of the risks, a system of permits to work is in place at the mine 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) issue, or cause a permit to work referred to in paragraph (a) to be issued by a competent person before the particular activity concerned commences, which 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 at a mine

19. Every person at work at a mine shall—

- (a) comply with instructions, rules, schemes, plans and operating procedures prepared under these Regulations, and
- (b) keep any self-rescue respiratory device provided to him or her within his or her reach at all times when below ground.

Mine safety representative

20. (1) It shall be the duty of the operator to make and maintain arrangements which will enable him or her and those persons who are regularly employed at the mine to co-operate effectively in promoting and developing measures to ensure the safety, health and welfare of persons who regularly work at the mine and in checking the effectiveness of such measures.

(2) The operator shall ensure that a mine safety representative, for the purposes of performing functions relating to safety, health and welfare at a mine, is provided with access to—

- (a) risk assessments carried out under section 19 of the Act of 2005,
- (b) any information relating to accidents and dangerous occurrences required to be reported under the relevant statutory provisions, and
- (c) any information, arising from protective and preventive measures taken under the relevant statutory provisions, or provided by—
 - (i) the Authority,
 - (ii) a person prescribed under section 33 of the Act of 2005, or
 - (iii) a person referred to in section 34(2) of the Act of 2005.

Consultation

21. In complying with requirements of section 26 of the Act of 2005, the operator and every employer at a mine shall also consult at the mine with their safety representatives and employees as the case may be, in relation to the requirements of these Regulations, taking account of the need, whenever necessary, for co-operation and co-ordination among—

- (a) the operator 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 mine and to monitor the effectiveness of such measures.

Record keeping

22. (1) The operator shall ensure that—

- (a) every diagram, drawing, instruction, operating procedure, plan, report, rule or scheme required to be prepared under a provision of these Regulations, is kept in an appropriate form, at the mine or other suitable place, and
- (b) a copy of the written statement of duties of all persons appointed at the mine under these Regulations is kept at the mine or other suitable place for at least one year from the date of termination of the person's employment.

(2) Where, under these Regulations a document referred to in paragraph (1)(a) is required to be prepared, it is sufficient compliance with the requirement if the operator and, where appropriate, other persons concerned—

- (a) prepare the document by electronic means,
- (b) duly authenticate it as soon as is practicable after it is made, and
- (c) maintain the document by electronic means.

(3) The operator shall ensure that when mining operations have permanently ceased at the mine the records referred to at paragraph (1)(a) are kept for a period of 6 years, unless otherwise required by these Regulations relating to a particular class of record—

- (a) at the address (or principal address) at which the person carries on business or (if there is no such address) the address at which the person ordinarily resides, or
- (b) if—
 - (i) a company (formed and registered under the Companies Act 2014 or an existing company within the meaning of that Act) at its registered office, or
 - (ii) another body corporate or unincorporated body, at its business or principal place of business.

PART 3

INSPECTION AND SUPERVISION

Inspection, maintenance and testing schemes

23. (1) The operator, for the purposes of securing so far as is reasonably practicable, the safety, health and welfare of persons at work in the mine shall ensure—

(a) that suitable schemes are prepared, for the systematic inspection, maintenance and, where appropriate, testing of—

(i) all parts of the mine,

(ii) all travelling routes, airways or roadways that are not normally places of work,

(iii) all shafts and hoisting systems,

(iv) all buildings (whether temporary or permanent) at the mine,

(v) all electrical installations and circuits at the mine,

(vi) any vehicle, plant and work equipment at the mine, and

(vii) all equipment provided for fire-fighting at or within the mine,

and

(b) that suitable records are made of inspections, maintenance and tests carried out under subparagraph (a) and that each such record lists any significant defects and the steps taken, or to be taken by a specified time, to remedy them and is—

(i) signed by the person making it, and

(ii) read and countersigned by a person appointed under Regulation 10.

(2) Without prejudice to the generality of paragraph (1), the schemes referred to in that paragraph shall specify that—

(a) on every working day the roofs, floors and sides at every workstation at the mine and every roadway used by persons at work at the mine for the purpose of their work or of getting to or from their place of work are inspected for loose ground or loose rocks, and

(b) where, during an inspection under subparagraph (a), conditions are observed that constitute a significant hazard or a potential significant hazard at an excavation, tip or lagoon, the requirements of Regulation 50 are complied with.

(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 of each inspection carried out under paragraph (2) and, where necessary, the appropriate remedial measures taken under paragraph (3), is made.

Supervision of work

24. (1) The operator shall ensure—

- (a) that a person shall not pass beyond a meeting station established by the mine manager or enter any working area unless instructed to do so by the shiftboss or supervisor to whom he or she is assigned unless the person does so in pursuance of an arrangement made by the operator,
- (b) that a shiftboss or supervisor shall not instruct any person to enter a working area or go to a place of work unless the shiftboss, supervisor or a competent person appointed by the operator is satisfied that it is safe to do so, having regard to any instruction given to the person relating to safety,
- (c) that a shiftboss shall be assigned to each working area in which a place of work to which a worker is to go to carry out work is situated (other than pump-minders, mechanics, electricians, surveyors, engineers or persons performing duties of a specialised nature),
- (d) where a person performing duties of a specialised nature referred to in subparagraph (c) is working below ground, they shall be—
 - (i) accompanied at all times during the working period by a competent person appointed by the operator,
 - (ii) visited at intervals not exceeding four hours during the working period by an assigned shiftboss or a competent person appointed by the operator,
 - (iii) in telephonic communication at least once in every two hours during the working period, with a competent person appointed by the operator, or
 - (iv) monitored electronically as to their exact location.

Carrying out and recording of inspections required by Regulation 16

25. (1) The operator, so far as is reasonably practicable, shall ensure that an inspection—

- (a) under Regulation 16 (1) (d) is carried out in accordance with that Regulation and that information in relation to the inspection is recorded in the Form MR3 specified in Part 1 of Schedule 2.
- (b) under Regulation 16 (1) (l) is carried out in accordance with that Regulation and that information in relation to the inspection is recorded in the Form MR4 specified in Part 2 of Schedule 2.

- (2) The operator, so far as is reasonably practicable, shall ensure that—
- (a) records of inspections required under Regulation 16 are read and countersigned by a person appointed under Regulation 10,
 - (b) any details of the dangers recorded in the general inspection report are appropriately acted upon, and
 - (c) remedial action is recorded in the general inspection report.

Other inspections

26. (1) Without prejudice to Regulation 23, the operator shall ensure that competent persons, engineers or technicians, at intervals specified in the safety statement, shall inspect every part of the mine where persons regularly pass and every walkable airway or roadway not within the working areas of any shiftboss, to ascertain the adequacy of ventilation, the presence of toxic gases and the stability of roofs, floors and sides, to determine if it is safe and without risk to persons who are to be employed at the mine.

(2) The operator shall ensure that on completion of an inspection under paragraph (1), the competent person, engineer or technician concerned shall complete a report giving the findings of the person on the inspection, and his or her name, in the Form MR5 specified in Part 3 of Schedule 2.

PART 4

ROADWAYS AND VEHICLES

Construction and equipment of vehicles

27. (1) The operator shall ensure that—
- (a) every mechanically propelled vehicle where the motive power is generated by an internal combustion engine is constructed and maintained so that air entering the engine is cleaned and where necessary the exhaust gases are cooled and diluted and the emission of flame or sparks from such vehicles is prevented,
 - (b) every mechanically propelled vehicle where the motive power is generated by an electric motor supplied from a storage battery is adequately constructed, maintained and ventilated and the battery housing is securely affixed to the vehicle,
 - (c) every mechanically propelled vehicle where the motive power is generated by an electric motor supplied from an electrical supply other than a storage battery is adequately constructed, maintained and ventilated,
 - (d) every mechanically propelled vehicle is provided with the following:
 - (i) efficient braking systems;

- (ii) suitable instrumentation, including adequate warning systems, placed so that they can be clearly seen by the driver of the vehicle;
- (iii) an audible warning device;
- (iv) an efficient lighting system including a head and tail light;
- (v) where practicable, a cab provided with falling object protection (FOPS) and roll over protection (ROPS);
- (vi) where practicable, an automatic or semi-automatic fire fighting system;
- (vii) suitable and sufficient portable fire extinguishers;
- (viii) as appropriate, an isolation switch;
- (ix) as appropriate, auxiliary devices installed to improve the drivers all round visibility,

and

- (e) the items provided under subparagraph (d) are adequately maintained.

(2) In this Regulation—

“falling object protection (FOPS)” means a structure on mobile equipment designed to protect the person operating the equipment from the danger of injuries caused by objects falling on the equipment from above;

“isolation” in relation to an external electrical isolation switch, means the disconnection and separation of electrical equipment from every source of electricity in such a way that the disconnection is secure;

“roll over protection (ROPS)” means a structure on mobile equipment intended to protect the person operating the equipment from the danger of injuries caused by the equipment overturning or rolling over.

Inspection and maintenance of vehicles

28. (1) Without prejudice to Regulation 23, the operator shall—

- (a) ensure a system of driver pre-start checking for each mechanically propelled vehicle, including an inspection of the vehicles external parts, is operated and maintained to ascertain that it is safe for use,
- (b) appoint a competent person to inspect and internally examine once in every 24 hours each mechanically propelled vehicle to ascertain that it is safe for use,
- (c) appoint a competent person to inspect and examine at least once in every seven days each mechanically propelled vehicle at the mine,

including examination and testing of the braking system, for the purposes of ascertaining that the vehicle is in all respects properly maintained and in good working order, and

- (d) cause to have all defects identified under subparagraph (a), (b) or (c) on any mechanically propelled vehicle, which may be prejudicial to the safety of persons at work remedied by a competent person before that vehicle is put into or returned to service.

(2) The operator shall ensure that suitable written reports are made of inspections, maintenance and tests carried out under paragraph (1) and that each report records the date and time of the inspection, maintenance or test, any significant defects and the steps taken, or to be taken, to remedy them, and that each report under this paragraph—

- (a) is signed by the person making it, and

- (b) is read and countersigned by a person appointed under Regulation 10.

(3) The operator shall appoint a sufficient number of competent persons to undertake the activities referred to in paragraphs (1) and (2).

Appointment of drivers

29. The operator shall—

- (a) appoint competent persons to be in control of mechanically propelled vehicles stating the types or classes of vehicles for which the appointment is valid, and

- (b) prohibit any person who has not attained the age of eighteen years from being in control of any mechanically propelled vehicle underground at the mine.

Carrying of passengers

30. The operator shall prohibit the carrying of passengers on any mechanically propelled vehicle unless—

- (a) the vehicle is designed for the carrying of passengers,

- (b) a person providing instruction or training requires the vehicle to be moved for the purposes of such instruction and training, or

- (c) a person repairing or testing the vehicle requires the vehicle to be moved for the purposes of such repair or testing.

Roadway surfaces

31. The operator shall ensure, in so far as is reasonably practicable, that the surface and camber of every roadway used by mechanically propelled vehicles is maintained throughout its length in a condition which is both suitable and sufficient to prevent danger to drivers or pedestrians.

Roadway clearances

32. The operator shall ensure, in so far as is reasonably practicable, that—
- (a) any mechanically propelled vehicle is only used in any roadway where, after allowing for the swing of the vehicle, the clearances are adequate for the safety of the driver, and
 - (b) where other vehicles or pedestrians pass, the clearances are adequate for the safety of other vehicle drivers and pedestrians.

Gradients

33. The operator shall prohibit, in so far as is reasonably practicable, a mechanically propelled vehicle from being used on any roadway where the gradient of any part of the roadway exceeds the maximum gradient specified by the manufacturer of the vehicle.

Safety of pedestrians in roadways

34. The operator shall prohibit pedestrians and mechanically propelled vehicles from being present in the same roadway—
- (a) unless preventive measures are taken to minimise the risks to pedestrians travelling that roadway, and
 - (b) in a case where a mechanically propelled vehicle is being operated remotely by the driver, unless the driver—
 - (i) operates the remote control mechanism from a position of safety outside of the expected area of movement of the vehicle, and
 - (ii) has a clear and unobstructed view, including by means of video surveillance, of the operations being carried out remotely.

Vehicle and traffic rules

35. (1) The operator shall ensure, in so far as is reasonably practicable, that suitable vehicle and traffic rules are prepared and, where necessary reviewed and updated for the purpose of preventing the risks to persons arising from the use of vehicles at the mine, including where machines or vehicles enter or leave the mine.

(2) The operator shall prohibit the operation of transport vehicles, earth-moving machinery, materials-handling machinery and locomotives, including those operated by another employer at the mine unless the operator is satisfied that the vehicles, machinery and locomotives are—

- (a) of good design and construction taking into account as far as possible ergonomic principles,
- (b) maintained in good working order,
- (c) used in an appropriate manner,

(d) not operated otherwise than by—

- (i) a competent person who has attained the age of 18 years, or
- (ii) a person who has attained the age of 18 years, and is under the close personal supervision of a competent person for the purpose of his or her training, and

(e) provided with appropriate auxiliary devices to improve the all round visibility of the driver.

Safeguarding edges of excavations and lagoons

36. The operator shall—

- (a) prohibit the placing or stacking of material at the mine near the edge of any excavation or lagoon, where it is likely to endanger persons at work,
- (b) prohibit the movement or placement of any load, vehicle, plant or equipment near the edge of any excavation or lagoon where it is likely to enter the excavation or lagoon or cause a collapse of the side of the excavation or lagoon and thereby endanger any person at work, and
- (c) where necessary, ensure the provision and erection of appropriate barriers at any edge of an excavation or at a lagoon.

Danger areas

37. (1) The operator shall ensure—

- (a) that danger areas are clearly marked,
- (b) that equipment or barriers are installed at all access points of any danger area to restrict inadvertent entry to that area by persons at work not authorised to enter, and
- (c) where a person at work is authorised to enter a danger area, that appropriate measures are taken to protect the person's safety, health and welfare.

(2) In this Regulation “danger area” means an area of the mine 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.

Pedestrian and Vehicle Traffic routes

38. The operator shall ensure, in order that places of work may be reached without danger and left quickly and safely in an emergency, that—

- (a) traffic routes, including stairs, fixed ladders, loading bays and ramps, for the purpose of easy, safe and appropriate access, are designed,

located, laid out and negotiable so as not to endanger persons working in the vicinity of these traffic routes,

- (b) routes provided for use by pedestrian or goods traffic, or both, including those used for loading and unloading are of adequate size having regard to the need to accommodate the number of potential users and the type of activity concerned,
- (c) where means of transport are used on traffic routes, there is a sufficient safety clearance or adequate protective devices for other users, and that routes are clearly marked, regularly checked and properly maintained,
- (d) that sufficient clearance between vehicle traffic routes and doors, gates, passages for pedestrians, corridors and staircases is provided, and
- (e) that, for the protection of persons at work, all traffic routes are clearly identified.

Outdoor workstations

39. 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, they are, where possible—
 - (i) protected against inclement weather conditions,
 - (ii) not exposed to harmful noise levels or to harmful external influences such as gases, vapours or dust, and
 - (iii) protected against slips or falls.

Protection from falling objects and provision of safety helmets

40. (1) The operator shall—

- (a) ensure that adequate measures are taken to prevent persons at work from being struck by any falling object,
- (b) where feasible, protect or cause persons to be protected by collective methods against falling objects, and
- (c) take or cause to be taken adequate measures to lay out or stack materials, equipment and other articles in such a way as to prevent their collapsing or overturning.

(2) The operator shall ensure, unless there is no foreseeable risk of injury to a person's head, that every person at work at the mine is provided with—

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

(3) A person shall not, at a mine, 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.

(4) A person who moves materials or objects, including waste materials at a mine shall not do so at a height where they are liable to cause injury.

Prevention of drowning

41. (1) The operator shall ensure that secure fencing is provided at a mine and, where practicable, the secure fencing is placed near an edge, structure or platform to prevent a fall where there is risk of such a fall from—

- (a) an edge adjacent to water,
- (b) a structure adjacent to or above water, or
- (c) a floating platform.

(2) To the extent necessary for the access of persons or movement of materials, paragraph (1) shall 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 mine, 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) appropriate personal flotation devices are provided which are worn at all times by persons while exposed to that risk,
- (b) suitable rescue equipment is provided and it is properly maintained and ready for use, and
- (c) arrangements are in place for the prompt rescue of any person who is in danger of drowning

(4) The operator shall ensure that procedures are in place and carried out in relation to personal flotation devices referred to in paragraph (3) as regards—

- (a) properly maintaining them,
- (b) having them checked before each use,
- (c) having them inspected in accordance with the manufacturer's instructions, and

- (d) having them 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 it out shall—
- (a) make a report of his or her findings in a form approved by the operator,
 - (b) sign and date the report, and
 - (c) give a copy of the report to the operator.

PART 5

VENTILATION

Duty to provide adequate ventilation

42. (1) The operator shall ensure that, in so far as is reasonably practicable—
- (a) adequate ventilation is produced, on a constant basis, in all underground parts of the mine where people are working, travelling through, going to or from their place of work, or have cause to enter in connection with their work so that—
 - (i) the atmosphere contains a sufficiency of oxygen,
 - (ii) any flammable gas is diluted so as to render it harmless,
 - (iii) working conditions are reasonable as regards temperature and humidity, and
 - (iv) any applicable occupational exposure limit values, within the meaning of the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001) are, for the purposes of those Regulations, complied with,
 - (b) where he or she is temporarily unable to comply with the requirements of paragraph (1) (a) as a result of an interruption to the ventilation in all or a part of the mine—
 - (i) access is restricted or prevented to all, as the case may be, or the part of the mine affected by the interruption, other than for the purpose of restoring the ventilation or in case of an emergency, and
 - (ii) any persons working in all or, as the case may be, the part of the mine concerned are withdrawn,
 - (c) an automatic alarm is provided and maintained that operates in the event of an unscheduled fan stoppage resulting in an interruption to the main ventilation supply,

(d) harm to the health of persons employed below ground from the adverse effects of extremes of heat or cold is prevented, and where conditions in any place of work are, or are likely to be, hot and humid, that the following are provided and implemented:

- (i) training on measures to be taken to avoid any harmful effects from those conditions;
- (ii) appropriate additional environmental controls relating to places of work (including ventilation) and monitoring;
- (iii) monitoring of the health of employees in their place of work.

(2) An operator shall not be obliged to comply with paragraph (1) (a) in relation to a part of a mine that is inaccessible.

Main ventilation fans

43. The operator shall ensure that—

- (a) where adequate ventilation cannot be provided by wholly natural means, adequate mechanically operated apparatus, in this Part referred to as the “main ventilation fans”, capable of producing an amount of ventilation sufficient to ensure compliance with Regulation 42, are provided and maintained at the mine,
- (b) the main ventilation fans which are provided are designed so that the direction of air flow into or out of the mine may be reversed,
- (c) where necessary, an efficient air-lock separating the main ventilation fans from the connecting shaft or roadway is provided, and
- (d) continuous monitoring of operating parameters of the main ventilation fans, by means of the depression of the fans or other equivalent means, is carried out.

Additional underground fans

44. (1) The operator shall prohibit the installation underground of a fan additional to the main ventilation fans, in this Part referred to as an “additional underground fan”, other than an auxiliary fan, unless—

- (a) he or she is satisfied, having considered the results of the survey undertaken under subparagraph (b) and the report prepared under subparagraph (c), that the additional underground fan is required to ensure compliance with Regulation 42,
- (b) a survey of the ventilation of every part of the mine which may be affected by the additional underground fan is undertaken, and
- (c) a report is prepared determining the appropriate type, size and location of the additional underground fan.

(2) The operator shall ensure a record of the survey and report prepared under paragraph (1) is kept.

Auxiliary ventilation

45. (1) The operator shall ensure that auxiliary ventilation is provided by means of an auxiliary fan at all places of work in the mine that cannot be adequately ventilated either naturally or by the provision of the main ventilation fans or an additional underground fan.

(2) The operator shall ensure that an auxiliary fan installed at a mine under paragraph (1) shall be—

- (a) earthed so as to prevent the accumulation of an electro-static charge,
- (b) connected to ducting for conducting air to or from the place of work to be ventilated to ensure adequate delivery of air to the furthestmost working point,
- (c) installed at a point at a mine not less than 5 metres from the entrance to the place it is to ventilate,
- (d) installed on the intake side of the entrance when forcing ventilation, and
- (e) installed on the return side of the entrance when exhausting ventilation.

(3) The operator shall ensure that—

- (a) the quantity of air reaching the auxiliary fan is sufficient to ensure that it does not re-circulate air, and
- (b) the air circulated by the auxiliary fan is not at any time contaminated by a substantial quantity of any noxious or flammable gas or dust.

(4) The operator shall prohibit a worker from entering or remaining in a place in a mine ventilated by an auxiliary fan while the auxiliary fan is not operating, unless the interruption is temporary and work is ongoing to re-start the auxiliary ventilation.

Prevention of leakage

46. The operator shall ensure that, in so far as is reasonably practicable—

- (a) measures are in place to prevent leakage of ventilation from intake roadways to return roadways other than where such leakage is planned in accordance with the ventilation rules, and
- (b) measures are in place to minimise leakage of ventilation into areas of the mine where mining operations are for the time being suspended or complete.

Ventilation rules

47. (1) The operator shall ensure that rules are prepared, in this Regulation referred to as the “ventilation rules”.

(2) The ventilation rules shall be available at the commencement of mining operations.

(3) The ventilation rules shall provide for—

- (a) the minimum quantity of air to be delivered to each working area and place of work,
- (b) the minimum quantity of air in each intake and return roadway,
- (c) the minimum quantity of air to be delivered or exhausted at the end of an air duct attached to an auxiliary fan,
- (d) identification of the points within the mine at which the quantity of air passing shall to be measured and the frequency of these measurements,
- (e) requirements for the construction of ventilation brattices,
- (f) requirements for the construction of air-locks, regulators and air doors,
- (g) information to be provided on the use of materials used for ventilation brattices, and
- (h) the procedures for recording and acting upon the results obtained in the measurements referred to in subparagraph (d).

PART 6

STABILITY AND GROUND SUPPORT

General duty to ensure safety of excavations, tips and lagoons

48. The operator shall ensure that—

- (a) excavations, tips and lagoons are designed, operated and maintained, and
- (b) tips and lagoons are constructed

so that, so far as is reasonably practicable, instability or movement 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

49. The operator shall ensure that operating procedures are prepared for the safe operation of excavations, tips and lagoons and such procedures shall specify—

- (a) the manner in which such operation is to be carried out,

- (b) the nature and extent of supervision of such operation,
- (c) the protective measures to be taken during such operation to ensure the safety, health and welfare of any person and the safety and stability of the excavation, tip or lagoon, and
- (d) the schedule and content of inspections to be carried out by competent persons to monitor the safety and stability of the excavation, tip or lagoon.

Appraisal and site investigation of excavations, tips and lagoons

50. (1) Subject to paragraphs (2) and (3), the operator shall ensure that, before operations commence or re-commence in a particular area in the mine, a geotechnical appraisal of all proposed and existing excavations, tips and 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, or a potential significant hazard.

(2) Where an appraisal under paragraph (1) identifies a significant hazard that cannot be rectified immediately in a safe manner, the operator shall comply with paragraph (4).

(3) Where an appraisal under paragraph (1) identifies a potential significant hazard that cannot be rectified immediately in a safe manner, the operator shall—

- (a) comply with paragraph (4) (a) and (b), and
- (b) require a geotechnical specialist to perform a site investigation to determine—
 - (i) whether a geotechnical assessment is required, or
 - (ii) if there is a significant hazard.

(4) Where paragraph (2) applies, or if a significant hazard has been identified under paragraph (3)(b), the operator shall ensure that—

- (a) appropriate protective measures are taken, including informing all persons affected by the significant hazard,
- (b) work that can safely be undertaken at the excavation, tip or lagoon is carried out, and
- (c) a geotechnical assessment is carried out.

(5) The operator shall ensure that—

- (a) any significant findings made, and
- (b) any conclusions reached and the reasons for those conclusions,

arising from an appraisal or a site investigation under this Regulation, are recorded by the competent person or the geotechnical specialist, as the case may be and acted upon as necessary.

Geotechnical assessments

51. (1) In this Regulation, 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 surface or underground excavation, tip or lagoon and shall include—

- (a) preparation, by or under the supervision of the geotechnical specialist of any of the plans, records, reports and particulars specified in Schedule 3 or, as appropriate, consideration by the geotechnical specialist of those plans, records, reports and particulars,
- (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 under Regulation 49 in respect of the excavation, tip or lagoon.
- (2) The operator shall ensure that—
 - (a) any significant findings made during a geotechnical assessment, in particular any conclusions under paragraph (1) (b), and the reasons for those conclusions are recorded by the geotechnical specialist carrying out the assessment,
 - (b) the geotechnical specialist signs and dates any record under subparagraph (a) and records his or her professional qualifications thereon,
 - (c) any available information that may be relevant for the purposes of a geotechnical assessment is provided to the geotechnical specialist undertaking that assessment,
 - (d) sufficient records of the nature, physical properties and location of all strata or accumulated substances or deposits at an excavation, tip or

lagoon are kept to enable an accurate geological assessment of the stability of that excavation, tip or lagoon to be made,

- (e) any remedial works identified under paragraph (1)(b)(ii) during the geotechnical assessment are completed by the date specified in the assessment or before mining operations are commenced or recommenced,
- (f) copies of all geotechnical assessments are retained at the mine for inspection, and
- (g) where the conclusion reached under paragraph (1)(b)(ii) is that there is no significant hazard, the frequency with which an appraisal under Regulation 50 is to be conducted in the future in order to ensure the continued safety and stability of the excavation, tip or lagoon is specified by the geotechnical specialist and recorded and acted upon as necessary.

Stability of roadways and places of work

52. (1) The operator shall ensure that, so far as is reasonably practicable—

- (a) any steps to secure the stability of roofs, floors and sides of every travelling roadway, outlet and place of work in a mine are taken, and a person shall not, unless engaged in repairing or investigating the safety of the workings, travel on or work in any travelling roadway or place of work which is not made secure,
- (b) adequate steps are taken by way of controlling movement of the strata in the mine and, where necessary, implementing systems for supporting the roof and sides of every roadway or place of work to keep them secure, and
- (c) those affected are provided with all information relevant to the support of roadways and places of work in the mine.

(2) In this Regulation, “travelling roadway” means a length of roadway in a mine, used for the purpose of walking or driving to or from a place of work.

Duty to inspect place of work

53. It shall be the duty of every person in the mine to inspect their place of work including access to and egress from the place of work in relation to the condition and stability of roofs, floors and sides and—

- (a) where necessary and it is safe for them to do so, take appropriate action to make the place safe or, if necessary, prevent access to that place, or
- (b) where the person cannot take appropriate action to make the place safe, remove himself or herself to a place of safety and inform or cause to have the shiftboss informed as soon as is reasonably

practicable of any hazards observed and any actions taken by him or her.

Scaling of roof and sides

54. The operator shall ensure that—

- (a) appropriate equipment and tools are provided to enable, where necessary, removal of loose material that may fall from the roof or sides, in this Part referred to as “scaling and dressing” of all roadways and places of work,
- (b) where practicable, primary scaling and dressing is carried out by mechanical means by persons operating from a position of safety, and
- (c) procedures are in place so that any manual scaling and dressing of roadways and places of work is carried out by persons from a position of safety.

Working at or near unsupported stopes

55. The operator shall ensure that—

- (a) any work at or near any unsupported stope is carried out in such a way that a person is not placed at risk of being struck by falls, slips or movement of ground,
- (b) when work is not being carried out, unintentional entry to an unsupported stope is prevented by means of a suitable barrier.

Use of backfill as a means of support

56. Where the use of backfill of open areas of the mine forms part of the overall support of the mine the operator shall ensure that—

- (a) areas are identified and backfilled as soon as is reasonably practicable,
- (b) backfill material is transported and placed in a safe manner,
- (c) backfill material is placed as tightly as is reasonably practicable to the roof and sides of the area being filled,
- (d) adequate measures are taken to prevent backfill material from migrating from the area being backfilled, and
- (e) where applicable, the solidity of backfill material is determined.

Ground support rules

57. (1) The operator shall ensure that rules are prepared, in this Regulation referred to as the “ground support rules”.

(2) The ground support rules shall be available at the commencement of mining operations.

(3) The ground support rules shall provide for—

- (a) mine design criteria and the geotechnical properties of strata in the mine,
- (b) design criteria for support systems used in the mine,
- (c) requirements for, and information and instruction to be provided regarding, securing the roof and sides of roadways and places of work,
- (d) a scheme for the inspection of support at all roadways and places of work,
- (e) procedures for mechanical and manual scaling and dressing of roadways and places of work,
- (f) measures taken to monitor the movement of strata or backfill material within the mine, and
- (g) procedures for the evaluation and review of the ground support rules following incidents of falls, slips or movement of strata or backfill material in the mine.

PART 7

EXPLOSIVES

Application of Part 7

58. (1) This Part shall apply to the storage, transport, use and disposal of explosives and ANBI at a mine.

(2) In this Part “Regulations of 2009” means the European Communities (System for the Identification and Traceability of Explosives for Civil Uses) Regulations 2009 (S.I. No. 133 of 2009).

Shotfirers and storekeepers

59. (1) The operator shall—

- (a) without prejudice to the generality of Regulation 10, appoint one or more competent persons to be—
 - (i) shotfirers who shall be responsible for shotfiring operations at the mine, and
 - (ii) trainee shotfirers.
- (b) appoint, where necessary, one or more competent persons as storekeepers who shall be responsible for safe storage and transport of explosives and ANBI at the mine.

(2) The operator shall ensure that a record of the appointment at the mine of any shotfirer, trainee shotfirer or storekeeper is kept at the mine or some other suitable place.

(3) A person appointed to be a trainee shotfirer under paragraph (1)(a)(ii) shall only perform shotfiring operations under the close personal supervision of a shotfirer.

Scheme of transit

60. (1) The operator shall for the purpose of safety ensure that a scheme for the conveyance of explosives is prepared in respect of a mine where explosives are in use, in this Regulation referred to as a “scheme of transit”, whereby explosives may only be conveyed in vehicles designated for that purpose, in this Regulation referred to as an “explosives vehicle” between—

(a) a store, magazine or place of transfer and—

(i) one or more than one store or magazine,

(ii) one or more than one underground reserve station, or

(iii) a place of work for immediate use,

or

(b) a reserve station and a place of work for immediate use.

(2) A scheme of transit shall be available at the commencement of mining operations at a mine where explosives are in use or planned to be used.

(3) A scheme of transit shall, where necessary, include provision for the conveyance of ANBI from a store, magazine or place of transfer, to or from an ANBI reserve station or a place of work for immediate use.

(4) The operator at a mine shall ensure compliance with a scheme of transit prepared in relation to the mine.

(5) Every scheme of transit shall contain rules which provide for each of the following matters:

(a) the location, construction and marking of each store, magazine, reserve station and place of transfer and the custody of any keys thereof;

(b) the type, design and construction of every explosives vehicle and fire-fighting equipment to be provided on any such vehicle conveying explosives or ANBI;

(c) the supervision and precautions to be taken during the loading, transit and unloading of explosives or ANBI vehicles;

(d) the supervision of explosives or ANBI at their stores, magazines or respective reserve stations;

(e) the manner of conveying explosives and ANBI to any place of work;

(f) the maximum quantity of—

- (i) explosives, excluding detonators, permitted to be at a reserve station,
- (ii) detonators permitted to be at a detonator reserve station, and
- (iii) ANBI to be in an ANBI reserve station,

which at any time shall not exceed the limit, specified in the licence granted under section 8 or 15 of the Act of 1875 relating to the mine;

- (g) the control and issue of explosives or ANBI from a store, magazine or reserve station, requiring that those issued for use are those that have been there the longest;
- (h) the return of unused explosive or ANBI to their respective reserve stations or such other places specified in the scheme of transit.

(6) Every scheme of transit shall require that the quantity of explosive and ANBI in the mine which is conveyed in bulk under the scheme and is unused at the mine is kept to the minimum necessary, consistent with the minimum quantity required for immediate use and for the safe operation of the mine and that such quantity shall not at any time, when aggregated with the quantity stored in a store or magazine, exceed the total quantity of explosive so licensed to be stored at the mine.

(7) Subject to paragraphs (5)(f) and (6), the person in charge of the explosive or ANBI at a reserve station shall, at the end of his or her period of duty—

- (a) in the case where the mine is not to be worked during the period of 14 days next following the end of that period of duty, return any explosive or ANBI in the reserve station to the appropriate store or magazine,
- (b) in the case where the mine is to be worked during the period of 14 days next following the end of that period of duty—
 - (i) deliver any explosive or ANBI in a reserve station to a person appointed to have charge of it, during the shift immediately following his period of duty,
 - (ii) forthwith return any explosive or ANBI in a reserve station to the magazine or store, or
 - (iii) securely lock any explosive or ANBI into a reserve station, and either deliver the key of the reserve station to a person appointed to have charge of the explosive and ANBI during the shift immediately following his or her period of duty, or deposit the key in the store or magazine.

(8) The operator shall ensure that a copy of the scheme of transit is readily available at the mine in such form as may be easily seen and read by persons employed in the mine and shall supply a copy of the scheme of transit to each shot-firer, trainee shot-firer and person in charge of any explosive or ANBI at any store or magazine, or their respective reserve stations.

(9) In this Regulation, “ANBI reserve station” means a suitable place below ground, exclusively for the issue and return and temporary storage of ANBI, which shall be a safe distance away from any other store, magazine or reserve station.

Storage, transport, use and disposal of explosives or ANBI

61. The operator shall ensure that—

- (a) only suitable explosives, ANBI mixing and pumping apparatus, ANFO pumping apparatus, and shot-firing apparatus are used at the mine,
- (b) all explosives or ANBI are stored in a suitable store or magazine licensed under the Act of 1875, or, subject to paragraphs (4) and (5) of Regulation 60, in a suitable reserve station,
- (c) the Regulations of 2009 are complied with,
- (d) all explosives and ANBI are received and issued at the mine under the control of a storekeeper,
- (e) so far as is reasonably practicable, all explosives and ANBI are stored, transported, used and disposed of safely and securely,
- (f) operations involving the storage and transport of explosives or ANBI are at all times carried out by, or under the close personal supervision of, a storekeeper,
- (g) operations involving the use or disposal of explosives or ANBI are at all times carried out by, or under the close personal supervision of, a shotfirer,
- (h) facilities and equipment are provided as necessary to enable shotfiring operations to be carried out safely and securely,
- (i) for the purpose of shotfiring operations, explosives vehicles are marked during use so as to be readily identifiable from a distance,
- (j) when detonators are being transported they are kept separate from other explosives and ANBI such that any accidental initiation of the detonators cannot transmit to the explosives or ANBI,
- (k) explosives are kept at all times in a locked store or magazine, locked reserve station, or in a locked receptacle identified in the scheme of transit, or under the close supervision of a competent person, and

- (l) the security requirements of the Garda Síochána, for the storage, (including at reserve stations), transport, use or disposal of explosives or ANBI are complied with at all times.

Shotfiring rules

62. (1) The operator shall ensure that rules are prepared in respect of a mine where explosives are in use, in this Regulation referred to as the “shotfiring rules”.

(2) Shotfiring rules shall be available at the commencement of mining operations.

(3) The shotfiring rules shall provide for the following:

- (a) procedures for all shotfiring operations at the mine;
- (b) the type and length of shotfiring cable to be used and procedures to protect the cable from sources of extraneous electricity;
- (c) the initiating devices to be used and the arrangements for the inspection, testing, maintenance and storage of initiating devices;
- (d) procedures for appointment of shotfirers, trainee shotfirers and storekeepers;
- (e) procedures for the authorisation of persons, who will be involved with the storage, transport, use or disposal of explosives or ANBI;
- (f) procedures for dealing with and recording of misfires;
- (g) procedures for disposal of surplus explosives, ANBI, accessories and packaging.

Blast specification

63. The operator shall ensure that—

- (a) adequate written blast specifications are prepared by a competent person—
 - (i) that include the identification of the danger zone, based on an assessment of the risks, for each type of shotfiring operation at the mine, and
 - (ii) so that where shotfiring operations identified by the competent person as being necessary occur, they will not, in so far as is reasonably practicable, place persons at undue risk, and
- (b) a copy of any relevant information contained in blast specifications referred to in paragraph (a) is provided to any person upon whom it imposes duties.

Shotfiring operations

64. The operator shall ensure that—

- (a) in 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 shall not fire shots, except where he or she is under the close personal supervision of a shotfirer,
- (d) records are kept of all shotfiring operations carried out at the mine.

Duties of mine manager and shotfirer

65. (1) The mine manager at the mine shall—

- (a) keep the operator informed regarding compliance with the relevant statutory provisions in relation to their application to storage, transport, use and disposal of explosives or ANBI at the mine,
- (b) organise and manage all work involving the storage, transport, use and disposal of explosives or ANBI at the mine,
- (c) based on an assessment of the risks, ensure that competent persons prepare blast specifications for each type of shotfiring operation or specific shotfiring operation in order that, so far as is reasonably practicable, when shotfiring occurs, it will not give rise to danger,
- (d) ensure that a person shall not carry out any work in relation to explosives or ANBI unless they are competent, adequately supervised and instructed to do so, and
- (e) ensure that all equipment used in shotfiring operations is suitable, safe and adequately maintained.

(2) The shotfirer and any other person involved in shotfiring operations at a mine shall only perform shotfiring operations in accordance with the shotfiring rules and blast specifications.

(3) The shotfirer at a mine shall ensure that—

- (a) other than for cutting external binding material, implements of copper, wood, fibre or other suitable material are used when opening cases, cartons or packaging containing explosives,
- (b) the exposed face is cleaned and examined for misfires or any indication of misfires, and any old sockets and cut off holes are identified and marked, before drilling is commenced at a place of work in a mine,

- (c) drilling and charging operations are not carried on simultaneously at the same place of work in a mine,
 - (d) shot holes are not charged until they have been thoroughly cleaned out,
 - (e) drill holes are not used where the diameter cannot reasonably accommodate the largest explosive cartridge or booster,
 - (f) explosives cartridges are not pressed into a shot hole in a violent or forced manner,
 - (g) shot holes are not overcharged,
 - (h) where necessary to prevent the explosives being blown out, shot holes are suitably stemmed,
 - (i) no part of a detonator is forcibly removed from any charged shothole,
 - (j) persons do not pass any sentry or barrier erected to prevent access to a danger zone other than for the purpose of investigating a misfire, and
 - (k) centralised blasting, where a number of blasts can be initiated simultaneously, is not undertaken unless a risk assessment has been carried out that indicates that it is safe to do so.
- (4) Before a shot is fired, a shotfirer shall ensure that—
- (a) all unused explosives and ANBI are removed from the area to be blasted,
 - (b) persons are prevented from being within, or entering within, the danger zone specified in the blast specification when the shot is being fired,
 - (c) the shotfiring system or circuit is checked to determine that it has been connected correctly,
 - (d) any electrical or electronic detonators are correctly connected to the shotfiring system and tested with an instrument suitable for the purpose,
 - (e) where appropriate, checks are carried out on the electrical integrity of the shotfiring system or circuit, such as to make a misfire unlikely, and
 - (f) any shot is fired from a place of safety.
- (5) After a shot is fired, a shotfirer or competent person shall ensure that—
- (a) persons are prevented from entering within the danger zone specified in the blast specification until it is safe to do so,

- (b) the blast site is inspected to check the result of the blast, and for the presence of any excessive sockets,
- (c) the muck pile is checked for unexploded explosives and to establish whether any misfire has occurred,
- (d) any hazardous conditions or misfires are reported immediately to the shiftboss, and
- (e) normal working only resumes when he, she or the shiftboss is satisfied that it is safe to do so.

Misfires

66. In the event of a misfire the shiftboss in consultation with a shotfirer shall, in so far as is reasonably practicable—

- (a) prevent any person other than himself or herself, the shotfirer, any trainee shotfirer or any other person authorised by him or her to enter the danger zone and only allow such entry, after any shotfiring apparatus has been disconnected from the shot and a period of 5 minutes has elapsed,
- (b) ensure appropriate steps are taken to determine the cause of the misfire and to deal with it, and
- (c) ensure that a suitable record is kept of the misfire and any action taken.

Prohibited activities

67. The operator shall ensure that—

- (a) only the following persons handle explosives or ANBI at a mine:
 - (i) a person authorised for the transport of explosives or ANBI to or from a store, magazine, or their respective reserve stations, a place of work or place of transfer;
 - (ii) a shiftboss;
 - (iii) a shotfirer or trainee shotfirer;
 - (iv) a storekeeper;
 - (v) any other competent person authorised by the operator to do so,
- (b) persons are prevented from—
 - (i) drilling a drill hole within 150 millimetres of any old sockets, cut off holes or shothole remnants,
 - (ii) drilling a drill hole within 1.5 metres of a hole containing any explosives or ANBI, and

- (iii) carrying out any drilling and charging operations simultaneously in any working area in a mine within 10 metres of each other,
- (c) persons are prevented from bringing any substance or article (other than explosives) likely to cause an unintended explosion or fire within 100 metres of any explosives or ANBI or take any naked flame within 100 metres of any explosives or ANBI at a mine,
- (d) persons are prevented from forcibly removing any detonator, or part thereof, or other system for initiating shots from a shothole at a mine after the shothole has been charged and primed,
- (e) a shothole in which a shot has previously been fired is not charged or fired unless the person charging or firing the shothole is dealing with a misfire under Regulation 66,
- (f) a shot at a mine is only fired by—
 - (i) a shotfirer or trainee shotfirer, and
 - (ii) by means of a suitable exploder that is kept at a secure place at the mine, or other suitable means provided by the operator,and
- (g) procedures are in place preventing a person, other than a shotfirer or trainee shotfirer, from disposing of surplus or misfired explosives, ANBI, accessories or packaging remaining following shotfiring operations at a mine.

Records of explosives and ANBI

68. The operator shall ensure that procedures are in place for recording of and accounting for—

- (a) in accordance with Regulation 9 of the Regulations of 2009, all explosives used or disposed of at the mine, and
- (b) all ANBI used or disposed of at the mine.

PART 8

ELECTRICITY

General

69. (1) This Part is in addition to and not in substitution for Part 3 of the General Application Regulations.

(2) In this Part—

“circuit” means part of an electrical installation supplied from the same origin, which may be protected against overcurrent by the same protective device;

“danger” means risk of death or personal injury or risk to health from electric shock, electric burn, electrical explosion or arcing, or from fire or explosion caused by the use of electricity or from mechanical movement of electrically driven equipment;

“higher voltage” means any voltage exceeding—

- (a) 1,000 volts alternating current, or
- (b) 1,500 volts direct current;

“live” means electrically energised;

“portable equipment” means equipment, including hand-held portable equipment, which—

- (a) because of the manner in which it is to be used, requires to be moved while it is working,
- (b) is designed so that it can be moved while it is working, or
- (c) is moved from time to time between the periods during which it is working.

Protection of cables and use of portable equipment

70. The operator shall ensure that—

- (a) all cables conducting electrical energy at potentially dangerous voltages are suitably protected by armouring and positioning them as appropriate to reduce to as low as reasonably practicable, the possibility of inadvertent contact with a live conductor,
- (b) the use of portable equipment, other than portable transformers and portable generators, that is supplied at a voltage exceeding 125 volts alternating current is prohibited, unless its rating exceeds 2 kilovolt amperes, and
- (c) the use of portable hand lamps supplied at a voltage exceeding 25 volts alternating current or 50 volts direct current is prohibited.

Introduction of electrical equipment

71. Before electrical equipment is first introduced below ground at a mine, the operator shall ensure that a copy of the ventilation plan is prepared and kept available on which the intended locations of the electrical equipment shall be shown.

Restriction of certain categories of electrical equipment in certain zones below ground

72. The operator shall ensure that—

- (a) at every mine containing zones in which flammable gasses or flammable dusts are potentially present in quantities sufficient to

indicate danger, a suitable plan is prepared identifying such zones, and

- (b) electrical equipment is not used in zones referred to in paragraph (a) unless—
 - (i) it is equipment of a kind suitable for that purpose categorised as Group I, equipment category M1 or M2 as appropriate for the purposes of conformity assessment procedures under the European Union (Equipment and Protective Systems Intended For Use in Potentially Explosive Atmospheres) Regulations 2017 (S.I. No. 230 of 2017) and,
 - (ii) it complies with the Regulations referred to in subparagraph (i).

Cutting off electricity or making safe where flammable gasses are found

73. (1) The operator shall ensure that a system is in place in order that, in circumstances where flammable gasses or dusts are detected in the mine either below ground or on the surface in a concentration giving rise to risk of a dangerous conflagration—

- (a) the supply of electricity to any electrical equipment situated at the place where the said concentration was detected is disconnected, and
- (b) all reasonably practicable steps are taken so that equipment at the place is made safe.

(2) The system in place under paragraph (1) is not required to comply with paragraph (1)(a) if the operator is satisfied that the electrical equipment situated at the place concerned is suitable for the purpose of remaining live in the circumstances referred to in paragraph (1).

(3) If the supply of electricity to electrical equipment is disconnected or the equipment is made safe under paragraph (1) it shall remain in that condition until a competent person on duty at the mine, having determined that it is safe to do so, directs that such precautions are no longer necessary.

(4) The operator shall ensure that details of the time, duration and location of any disconnection or making safe of the supply of electricity to electrical equipment under paragraph (1) are recorded.

Means of cutting off electricity to circuits below ground

74. The operator shall ensure, at every mine at which electrical equipment which may give rise to danger is installed below ground and is supplied from a power source at the surface of the mine, that switchgear is provided at the surface to disconnect the supply of current to that equipment and that adequate provision is made for the operation of that switchgear, including such means of communication as will, so far as is reasonably practicable, enable the switchgear to be operated in case of danger.

Schematic diagrams

75. The operator shall ensure that—

- (a) schematic diagrams and layout drawings are prepared of all electrical distribution systems intended to be operated at the mine (other than those operating at a voltage not exceeding 250 volts or installations of a temporary nature),
 - (b) the diagrams and drawings referred to in paragraph (a) are kept readily available at an accessible location at the mine,
 - (c) the planned settings of any circuit's electrical protective devices are recorded, and kept readily available at an accessible location at the mine,
 - (d) such portions of the schematic diagrams prepared under paragraph (a) are displayed—
 - (i) as are necessary to prevent danger, and
 - (ii) which show at least those parts of the electrical system which are served by switchgear operating at a voltage in excess of 250 volts at each place where such switchgear is installed,
- and
- (e) plans, on a suitable scale, are kept readily available at an accessible location at the mine showing, so far as is reasonably practicable, the position of all permanently installed electrical equipment at the mine.

Electric shock notices

76. Where, at any place in a mine, electrical energy is being generated, transformed or used at a nominal voltage in excess of 125 volts, the operator shall ensure that notices are displayed at strategic locations in a form which can be easily read and understood containing information on the appropriate first aid treatment for electric shock and details of the emergency action to be taken in the event of electric shock.

Storage, charging and transfer of electrical storage batteries

77. The operator shall ensure, where electrical storage batteries are used below ground, that they are stored, charged and transferred in a safe manner.

Leakage protection

78. The operator shall ensure—

- (a) in relation to every circuit in which higher voltage is used, that effective means for automatically cutting off the supply of electricity from that circuit is provided, with the leakage trip level set as low as is reasonably practicable, and

- (b) in relation to all circuits not operating at higher voltage, that a risk assessment is carried out by a competent person and on the basis of that assessment, provide or cause to be provided, so far as is reasonably practicable, effective means to prevent danger arising from leakage currents to earth.

Reportable incidents

79. Notwithstanding the requirements of Regulations 224 to 229 of the General Application Regulations the operator shall report, or cause to be reported to the Authority, as soon as reasonably practicable following its occurrence, an incident where a person reports suffering any electric shock or burn at a mine, from direct or indirect contact with a conductor in an electric circuit (being a circuit in which the voltage for the time being exceeds twenty five volts).

PART 9

ACCESS, EGRESS AND EMERGENCY PLANNING

Outlets and workings

80. The operator shall ensure that—

- (a) access to the surface is provided by at least two separate outlets which are soundly constructed and readily accessible to underground workers,
- (b) mechanical man-winding facilities, man-riding facilities or other means of transport for the outlets referred to in subparagraph (a) are made available where considerable physical effort is required to negotiate the outlets,
- (c) mechanical man-winding or man-riding facilities referred to in paragraph (b) are properly installed and used in accordance with written instructions, and
- (d) roadways are marked or signposted in accordance with Regulations 158 to 162 of and Schedule 9 to the General Application Regulations so as to enable workers to find their way, as necessary, from areas of the mine where extraction is taking place to a place of safety or to the surface.

Ladderways between working levels

81. Where a mine is worked at more than one level or in more than one seam and it is identified in the safety statement as a necessary measure, the operator shall ensure that a negotiable connection between each level or seam is provided which is readily accessible at all times.

Entrances to shafts, stopes and other openings

82. The operator shall ensure that entrances to shafts, stopes or other openings at a mine are—

- (a) so protected so as to prevent inadvertent access, and
- (b) marked with warning signs.

Escape and rescue facilities

83. Without prejudice to the generality of Regulation 103 the operator shall ensure that—

- (a) adequate means of escape and rescue are provided and maintained, so as to enable persons to leave the mine promptly and safely or go to a place of safety in the event of danger,
- (b) adequate means of communication and warning are provided to enable assistance, escape and rescue operations to be initiated as soon as is reasonably practicable,
- (c) instructions are prepared and displayed at the mine concerning the use of emergency equipment and the action to be taken in the event of an emergency,
- (d) persons at work at the mine receive adequate training on the appropriate action to be taken in the event of an emergency,
- (e) rescue equipment is provided and 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 are provided that are kept clear of obstructions and lead by the most direct means to the open air, a safe area or a safe assembly or evacuation point,
- (g) suitable emergency routes and exits are provided that are appropriate to the use, equipment and dimensions of the mine and the maximum number of persons who may be present at the mine,
- (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) doors are provided giving access to emergency routes and exits which are kept free from obstruction so that they can be used at any time without hindrance,
- (j) emergency lighting of adequate intensity is provided at all emergency routes and exits that require illumination, and
- (k) signs indicating specific emergency routes and exits are provided in accordance with Regulations 158 to 162 of and Schedule 9 to the General Application Regulations.

Safety drills

84. The operator shall ensure that safety drills are held at the mine at regular intervals, and in any event at least once every year, for persons at work at the mine for the purposes of—

- (a) training those persons 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 assessing the skills of rescue teams and such other persons to whom specific duties involving the use, handling and operation of emergency equipment have been assigned in the event of an emergency.

Fire and explosion hazards

85. (1) The operator shall prohibit any person at work at the mine from using a naked flame or carrying 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.

(2) The operator, depending on the features of the mine, 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 ensure that an adequate number of the following are provided at the mine:

- (a) appropriate fire-fighting devices;
 - (b) where required, fire detectors and alarm systems.
- (3) The operator shall ensure that—
- (a) regular checks and proper maintenance on fire-fighting devices, fire detectors and alarm systems are carried out,
 - (b) appropriate tests and fire drills are carried out at regular intervals,
 - (c) non-automatic fire-fighting equipment which is easily accessible, easy to use and, where necessary, protected from potential damage is provided, and
 - (d) signs are provided that indicate the location of fire-fighting equipment in accordance with Regulations 158 to 162 of and Schedule 9 to the General Application Regulations.

Explosive or harmful atmospheres

86. (1) Where there is potential for harmful or explosive atmospheres to be present at the mine, the operator shall ensure that—

- (a) adequate steps are taken in order to determine the presence and concentration of potentially harmful or explosive substances in the

atmosphere and, where such substances are present require a competent person to perform a risk assessment and determine the concentration of such substances in the atmosphere at all relevant locations in the mine,

- (b) automatic devices are provided that are designed to—
 - (i) monitor continuously the concentration of explosive or flammable gases or dusts in the atmosphere,
 - (ii) activate an alarm if such concentration reaches a dangerous level, and
 - (iii) disconnect power to any equipment that, because of the concentration of such gases in the atmosphere and the nature of the plant, gives rise to a risk to the safety and health of any person,
- (c) where devices are provided under subparagraph (b)(i), a competent person shall record the levels of concentration of such gases in the atmosphere at such intervals as the competent person considers to be necessary or as specified in the safety statement,
- (d) at any place in the mine 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 prevention under clause (i) is not practicable, to prevent the ignition of such an atmosphere,and
- (e) at any place in the mine where there is a risk of the occurrence or accumulation in the atmosphere of a substance harmful to health, appropriate measures are taken in order—
 - (i) to prevent such occurrence and accumulation or,
 - (ii) where prevention under clause (i) is not practicable, to extract or disperse the 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 mine where they may be 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 suitably stored and maintained and readily available for use,

- (b) a sufficient number of persons are trained in the use of equipment referred to at subparagraph (a), and
- (c) appropriate measures are taken to—
 - (i) suppress harmful substances at source,
 - (ii) extract harmful substances at source,
 - (iii) remove harmful substances, or
 - (iv) dilute accumulations of harmful substances, in such a way that persons are not at risk.

Lighting

87. The operator shall ensure that—

- (a) at the mine, where appropriate, lighting capable of supplying illumination sufficient to ensure the safety and health of persons in the mine is provided,
- (b) workstations provided, including outdoor workstations, as far as possible—
 - (i) receive sufficient natural light, and
 - (ii) having regard to climactic 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 passageways 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) at every part of the mine in which a person is likely to be exposed to risks in the event of the failure of artificial lighting—
 - (i) emergency lighting of adequate intensity is provided, or
 - (ii) all persons at work in that place are provided with an appropriate personal lamp.

Prevention of unauthorised entry

88. The operator shall ensure that—

- (a) mine boundaries are clearly visible, identifiable and appropriately signposted, and
- (b) adequate precautions are taken to prevent unauthorised entry to the mine including, where appropriate, the provision of barriers and fencing.

Means of evacuation

89. The operator shall ensure that all persons employed underground have received training in the appropriate action to be taken to evacuate their place of work or, as appropriate, the mine in the event of an emergency.

Underground workforce accounting

90. (1) The operator shall ensure that suitable and efficient systems and controls are in place so that at all times the numbers and identities of any persons employed underground and their probable location are known.

(2) For the purposes of paragraph (1), the operator shall ensure that a system is in place to operate, monitor and record check-in of persons going underground and to monitor check-out of persons who have returned to the surface.

Precautions for withdrawal of employees

91. The operator shall ensure that—

- (a) all persons employed underground have received training—
 - (i) in the use of a self-rescue respiratory device, and
 - (ii) in maintaining a self-rescue respiratory device within their reach at all times when below ground,
 and
- (b) a sufficient number of self-rescue respiratory devices are kept and maintained in good condition at the mine.

Precautions against external dangers to workings

92. The operator shall ensure that—

- (a) all persons employed below ground are provided with all information as is necessary to indicate the presence of—
 - (i) any disused workings, openings or cavities (whether a place of work in the mine or not),
 - (ii) any rock or stratum likely to contain water (whether dispersed or in natural cavities),
 - (iii) any peat, moss, sand, gravel, silt or other material likely to flow when wet or any body of surface water, and
 - (iv) any natural feature or disused workings that may contain noxious or flammable gas in such quantity and volume as to be a danger to persons employed below ground,
- (b) procedures are put in place, as may be necessary to verify any information referred to in paragraph (a), including the determination of the vertical and horizontal distances from an area of the mine

where extraction has taken or is taking place, to any place or thing referred to in subparagraphs (i) to (iv) of paragraph (a), and

- (c) procedures are in place to ensure the safety, health and welfare of persons carrying out work adjacent to, approaching or near any place or thing referred to in subparagraphs (i) to (iv) of paragraph (a).

Precautions against the outbreak of fire

93. The operator shall ensure that—

- (a) the quantity of flammable materials taken into the mine is restricted so that it is no more than is necessary for the efficient operation of the mine,
- (b) where cylinders of compressed gas are used below ground—
 - (i) they are installed and maintained with a suitable safety valve,
 - (ii) they are stored in a safe condition, and
 - (iii) procedures are in place to minimise the risk of the outbreak of fire from the use and storage of them,
- (c) necessary measures are taken to prevent the formation, accumulation and ignition of explosive atmospheres,
- (d) procedures are in place to prevent fires from starting and spreading,
- (e) procedures are in place for fast and effective fire-fighting, and
- (g) in addition to compliance with Regulation 85(3)(c), appropriate fire-fighting equipment is provided at all places of work at or within the mine including, as necessary, fire detection and alarm systems.

Warning of emergencies

94. The operator shall ensure that—

- (a) suitable and efficient means are provided for the purpose of warning and communicating, to those employed below ground, any emergency necessitating a speedy evacuation of their place of work and to enable assistance, escape and rescue operations to be immediately activated, and
- (b) at least once a year a test of the effectiveness of the actions to be taken in an emergency and the warning systems is carried out and, within 30 days of the carrying out of the test, a report of the effectiveness of the test and of any necessary remedial action required to be taken is forwarded to the Authority.

Refuge stations

95. (1) The operator shall ensure that a sufficient number of stations are provided below ground at the mine, in this Regulation referred to as “refuge

stations”, at locations close to places of work where evacuation to the surface in an emergency situation may either be impossible or place persons at undue risk.

- (2) A refuge station shall be—
 - (a) designed to prevent the entry of any gases, fumes, or products of combustion,
 - (b) of suitable size and dimensions for the number of persons that may be required to enter it,
 - (c) where possible, constructed from fire resistant materials, and
 - (d) provided with—
 - (i) a supply of drinking water,
 - (ii) equipment for maintaining a respirable atmosphere, and
 - (iii) where practicable, a means of communication.

Rescue teams

96. (1) The operator shall ensure that teams, in this Regulation referred to as “rescue teams”, are organised and maintained at a mine in the following numbers:

- (a) where the number of persons employed below ground in the mine does not exceed 100, at least 1;
 - (b) where the number of persons employed below ground in the mine exceeds 100 but does not exceed 350, at least 2;
 - (c) where the total number of persons employed in the mine exceeds 350, at least 3.
- (2) Where the number of persons employed below ground in the mine does not exceed 100—
- (a) the operator shall have a risk assessment carried out and the requirement in paragraph (1)(a) shall not apply where the risk assessment indicates that the provision of a rescue team is unnecessary,
 - (b) the requirement in paragraph (1)(a) shall not apply where a written agreement is entered into between the operator of the mine and the operator of another mine whereby a rescue team from the other mine will promptly be made available if needed.
- (3) Where a number of mines operate within a ten kilometre radius, they may, upon the entry by each of their respective operators into a written agreement to that effect, be treated together as a single mine for the purposes of this

Regulation and Regulations 97 to 104 and shall comply accordingly with this Regulation and Regulations 97 to 104.

(4) Where an agreement referred to in paragraph (3) is entered into, this Regulation and Regulations 97 to 104 shall apply to the mines concerned subject to the modification that any reference to a mine in this Regulation and Regulations 97 to 104 shall include a reference to the mines concerned and to any other necessary modifications.

Composition of rescue teams

97. The operator shall ensure that procedures are in place so that each rescue team—

- (a) is comprised of persons who have completed a scheme of training for rescue work approved by the operator,
- (b) comprises not less than five persons employed at the mine or familiar with the mine, who are fully trained in rescue work,
- (c) has a competent person appointed to be its captain,
- (d) is comprised of persons who have undergone a thorough medical examination by a registered medical practitioner to ensure that they are fit to undertake strenuous rescue work,
- (e) is comprised of persons with two years or more underground mining experience in operations at that mine or a mine using similar working methods, and
- (f) is provided with communication devices so that they can be summoned to the mine in an emergency at times when they are not employed at the mine.

Training of rescue workers

98. The operator shall ensure that each member of a rescue team—

- (a) has been certified by an instructor as being trained and competent in the use of breathing apparatus for rescue work,
- (b) is trained and qualified in occupational first-aid, and
- (c) without prejudice to Regulation 131, has been certified, within the 12 months prior to his or her appointment as a member of the rescue team and at least every 12 months thereafter, by a registered medical practitioner following a thorough medical examination to be fit to undertake strenuous rescue work.

Equipment to be provided for rescue work

99. (1) The operator shall ensure, having consulted with any rescue team and other competent persons as he or she considers necessary regarding sufficient amounts required and suitability for purpose of the equipment concerned, that

the following equipment is provided and maintained in readiness for immediate use for rescue work at the mine:

- (a) complete sets of breathing apparatus;
- (b) equipment for charging and re-charging of the breathing apparatus;
- (c) smoke helmets and ancillary equipment;
- (d) reviving apparatus;
- (e) first-aid equipment for rescue work;
- (f) lamps;
- (g) devices for making immediate determinations of the atmosphere and the presence and concentrations of noxious or toxic gases;
- (h) communication and signalling devices.

(2) The equipment provided under paragraph (1) shall be kept at the mine at a place not used for any other purpose.

(3) The operator shall ensure that adequately heated, lit and properly maintained accommodation for persons engaged in rescue work or training for rescue work is provided near to shafts or outlets.

(4) The requirements of paragraphs (1) and (2) shall not apply to mines to which paragraph (2) or (3) of Regulation 96 applies.

Fresh air base

100. The operator shall ensure that procedures are in place so that—

- (a) the captain of a rescue team may establish, in a place within a mine that is determined by a competent person to be—
 - (i) in a breathable atmosphere, and
 - (ii) suitable for use as a base for rescue work during rescue operations where there is, or may be, an irrespirable atmosphere,

a base, in this Regulation referred to as a “fresh air base”, being a place where breathing apparatus can be donned or removed and other operations undertaken in a safe-air environment before rescue work or training for rescue work is undertaken,

- (b) the captain of a rescue team shall not proceed beyond the fresh air base without a plan of the relevant part of the mine and having communicated and agreed with the incident controller on the route to be taken and the time estimated to reach the incident area or search area,

- (c) the captain of a rescue team engaged in rescue work or training for rescue work in any mine shall devote himself to directing the rescue team and securing, as far as reasonably practicable, its safety, and
- (d) during rescue work and training for rescue work an effective system of communication is established between—
 - (i) the incident controller and the fresh air base,
 - (ii) members of the rescue team itself, and
 - (iii) all rescue teams engaged in the rescue work and rescue work training and the fresh air base.

Rescue plans

101. (1) The operator shall ensure that the surveyor prepares, or causes to have prepared, a plan, or set of plans, in this Regulation referred to as a “rescue plan” for the mine which shows clearly and accurately all of the following:

- (a) areas of the mine where extraction has taken, or is taking, place;
- (b) the airways that the surveyor considers in consultation with the operator, to be principal airways;
- (c) the direction of the air current in each roadway;
- (d) principal ventilation doors between intake and return airways;
- (e) stoppings;
- (f) air-crossings, where intake and return airways are required to cross each other;
- (g) regulators of airflow;
- (h) refuge stations;
- (i) first-aid points;
- (j) fire-fighting points;
- (k) electrical installations;
- (l) communication points.

(2) In paragraph (1)(e), “stoppings” means barriers, walls, dams or bulkheads constructed to prevent access to disused or abandoned areas of the mine or to restrict airflow into those areas.

Incident controller

102. (1) The operator shall appoint one or more than one competent person at the mine to take charge on the surface at all times when rescue work is being

undertaken so that they co-ordinate and facilitate the rescue work and ensure that persons necessary for providing assistance to the rescue team are available.

(2) A person appointed under paragraph (1) shall be referred to as an “incident controller”.

Emergency rules and procedures

103. The operator shall ensure that emergency rules and procedures are prepared, in this Regulation referred to as “emergency procedures” which shall include—

- (a) the identification of circumstances where the emergency rules and procedures may require to be followed,
- (b) procedures for declaring when the emergency rules and procedures are required to be invoked,
- (c) procedures to be followed by persons employed below ground when the emergency rules and procedures are activated,
- (d) means for communicating an emergency situation to persons employed below ground,
- (e) procedures for notifying and assembling rescue teams,
- (f) procedures for accounting for persons within the mine,
- (g) restrictions on entry of persons into the mine, or parts of the mine, during an emergency,
- (h) duties of incident controllers and other persons having duties in an emergency, not directly related to rescue work,
- (i) duties of rescue team captains to their team,
- (j) duties of rescue workers,
- (k) procedures for notifying the relevant authorities, and
- (l) procedures for declaring that the emergency is over.

PART 10

PREPARATION OF MINE PLANS

Appointment and qualifications of mine surveyor

104. The operator shall appoint a competent person in this Part referred to as the “surveyor” to be the surveyor for the mine.

Duties of the mine surveyor

105. (1) The surveyor shall, at the request of the operator—
- (a) prepare or cause to be prepared and in which case supervise the preparation of—
 - (i) all plans for the mine, including, in accordance with paragraph (2), ventilation plans and, in accordance with paragraph (3), working plans and rescue plans, and
 - (ii) drawings of the mine and sections of the mine,
 - (b) ensure the accuracy of any plans or drawings prepared under paragraph (a),
 - (c) ensure that all working papers, recording all observations and calculations which were necessary for the preparation or checking of any plans or drawings prepared under paragraph (a) are kept at the mine,
 - (d) ensure that all plans or drawings prepared under paragraph (a) are reviewed at least every three months and, if necessary following such review, revised,
 - (e) on cessation of his or her appointment as surveyor, provide or cause to be provided to the operator accurate plans for the mine including associated drawings and working papers, and
 - (f) on cessation of mining operations or the permanent abandonment of a mine, provide or cause to be provided to the operator accurate plans for the mine including associated drawings and working papers showing the final position of the mine workings.
- (2) (a) The surveyor shall prepare a ventilation plan showing the system of ventilation in the mine which shall in particular show—
- (i) the general direction of the flow of the ventilation,
 - (ii) the points at which the quantity of air passing is measured, and
 - (iii) the principal devices for regulating the flow of the ventilation.
- (b) Every intake airway shall be coloured blue and every return airway shall be coloured red on a ventilation plan.
- (3) (a) The surveyor shall, subject to paragraph (b), prepare a working plan showing clearly and accurately the workings in a seam, vein or orebody and all shafts, outlets or drifts driven from or to it.
- (b) A working plan shall be revised—

- (i) 3 months after its first being prepared and at least every 3 months thereafter, or
- (ii) if any workings are extended more than 100 metres from the position shown on the working plan before the expiry of a period referred to in subparagraph (i), on or before the date that the workings are so extended.

Scale, datum and other details required on plans

106. The surveyor shall ensure that a working plan, ventilation plan or rescue plan—

- (a) is to a scale of not less than 1/2500,
- (b) is oriented to and correlated with the national grid maintained by Ordnance Survey Ireland,
- (c) indicates variations in level from an assumed datum below ordnance datum—
 - (i) on every intake and return airway,
 - (ii) in so far as can be ascertained, on the position and outline of any disused workings, and
 - (iii) at horizontal intervals not exceeding 100 metres,
- (d) indicates the position of—
 - (i) any peat, moss, sand, gravel, silt or other material that is likely to flow when wet,
 - (ii) any rock or stratum likely to contain water,
 - (iii) any workings of other mines, whether working or abandoned that may contain water, and
 - (iv) any disused workings that may contain water,

that is or are within 40 metres vertically or 100 metres horizontally in any plane from any place of work shown on the plan that may be dangerous to persons working in the mine to which the working plan, ventilation plan or rescue plan relates,
- (e) indicates the position, direction, extent and vertical throw, so far as they can be ascertained, of any known fault, washout, roll, igneous intrusion or other displacement in the strata,
- (f) where more than one seam, vein or level is being mined, includes a plan prepared for each seam, vein or level showing clearly and accurately the places of work and the position of all shafts or outlets at that level or within 40 metres above or below that level,

- (g) shows the direction of north in accordance with the national grid maintained by Ordnance Survey Ireland, and
- (h) states the date and by whom it was prepared.

Additional plans

107. (1) The surveyor shall prepare or cause to be prepared and in which case supervise the preparation of—

- (a) a sketch plan of the mine showing the main roadways and means of access and egress from each part of the mine to the surface,
- (b) a geological map showing the boundaries of the places of work at the mine, the geology of strata and occurrence of any superficial and drift deposits,
- (c) a plan showing a section of the geological strata passed through by any shaft or drift.

(2) The surveyor shall—

- (a) on cessation of his or her appointment as surveyor, provide or cause to be provided to the operator accurate plans for the mine including associated drawings and working papers, and
- (b) on cessation of mining operations, including the permanent abandonment of the mine, provide or cause to be provided to the operator accurate plans for the mine including associated drawings and working papers showing the final position of the mine workings.

Keeping of plans

108. The operator shall ensure that within three months of the cessation of mining operations or the permanent abandonment of a mine, a complete and accurate set of all plans or drawings and all necessary working papers required to be prepared under Regulations 105 and 107 are sent to the Authority.

Defective Plans

109. If an inspector is not satisfied as to the adequacy or accuracy of any plans or drawings required to be prepared under these Regulations he or she may require that any such plan, or drawing shall, as soon as is reasonably practicable, be revised by the surveyor for the mine.

PART 11

PROVISIONS RELATING TO HOISTING SYSTEMS

Appointment of hoistman

110. The operator, except in the case of automatic push button hoisting, shall—

- (a) appoint or cause to have appointed one or more than one person, as necessary, to operate mechanically or gravity operated winding or rope haulage apparatus at a mine, in this Part referred to as a “hoistman”, for the carriage of persons or materials at the mine,
- (b) ensure that only a hoistman shall operate any hoist for the carriage of persons or materials at the mine, and
- (c) ensure that a hoistman responsible for the carriage of persons at the mine holds a medical certificate to the effect that they are medically fit to perform their duties.

Hoisting rules

111. (1) Where a mechanical hoisting system is used at a mine, the operator shall ensure that rules are prepared, in this Regulation referred to as the “hoisting rules” in order to minimise the risks to persons arising from the use of the hoisting system at the mine.

(2) A hoisting system used at a mine shall include, where applicable—

- (a) the hoist mechanism, both electrical and mechanical,
- (b) the buildings in which all electrical and mechanical equipment relating to the hoist mechanism is located,
- (c) the shaft headframe, associated sheave wheels and all materials and personnel related infrastructure,
- (d) the shaft, including the infrastructure for the guidance of shaft conveyances,
- (e) all services within the shaft, including pipework, electrical and communications cables and ladderways, and
- (f) all infrastructure at shaft stations which is directly related to the safe operation of the shaft, such as barriers, doorways and gates.

(3) The operator shall ensure that hoisting systems used at the mine, including those operated by another employer at the mine are maintained, designed and constructed so as to be in good working order and properly used.

(4) The hoisting rules, at a minimum, shall provide for—

- (a) safety requirements at shaft top, shaft bottom and all shaft stations,
- (b) information and instruction to be provided on the safe operation of the hoist and braking systems,
- (c) requirements for speed control,
- (d) requirements for prevention of overwind and underwind conditions,

- (e) the use of instrumentation and shaft conveyance positioning systems,
 - (f) rope specification, load ratio, travelling speed, acceleration and deceleration speeds, whilst carrying personnel and when hoisting materials,
 - (g) safety precautions to be taken to prevent uncontrolled descent of the cage,
 - (h) a scheme for the inspection of the hoisting system and all associated infrastructure, and
 - (i) the keeping of records for all hoisting operations, all inspections and routine checks.
- (5) The hoisting rules shall also set out procedures for the following:
- (a) appointing hoistmen, shaftmen and cage tenders;
 - (b) communication between persons in the shaft and the hoistman;
 - (c) all inspection and maintenance to be carried out of the hoisting system and associated infrastructure;
 - (d) the use of the hoist for emergency purposes and assembly arrangements at shaft stations;
 - (e) the carriage of persons in the shaft;
 - (f) where applicable, the automatic operation of the hoist.
- (6) The operator shall ensure that the hoisting rules are brought to the attention of all persons at the mine affected by the rules.

Hoist controls, instrumentation and position indicators

112. (1) The operator, except in the case of automatic push button hoisting, shall ensure that—

- (a) the hoisting system instrumentation is fitted with appropriate movement control mechanisms, and
 - (b) all hoist system instrumentation is located in a place provided for the purposes of control of the hoist at the surface of the mine or other approved secure location.
- (2) Hoisting system instrumentation referred to in paragraph (1) shall include instrumentation to indicate—
- (a) the approximate position of the shaft conveyance within the shaft whilst the conveyance is travelling at its designed normal operating speed,

- (b) the position, as accurately as possible, of the shaft conveyance when in alignment with a shaft station,
- (c) the travelling speed of the shaft conveyance,
- (d) the approximate load being transported in the shaft conveyance, and
- (e) compliance with designed operating parameters, including current draw, drum rotation speed, bearing temperatures and motor vibration.

Braking systems

113. (1) Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus, in this Regulation referred to as “mechanically operated apparatus” is used for carrying persons through a shaft or unwalkable outlet, the operator shall ensure that one or more than one brake is provided on the drum or drum shaft which—

- (a) in a case where there are two cages or carriages, will hold the drum stationary when the loads are balanced and the maximum torque is applied thereto in either direction by the engine of the mechanically operated apparatus, or
- (b) in a case where there is one cage or carriage, will hold the drum stationary when a fully loaded cage or carriage is half way down the shaft or outlet and the maximum torque is applied thereto downwards by the engine of the mechanically operated apparatus.

(2) For the purposes of paragraph (1), the torque against the engine of the mechanically operated apparatus at the commencement of the raising of a cage or carriage, laden with the maximum load to be carried from the bottom of the shaft or unwalkable outlet, as may be appropriate, shall be regarded as the maximum torque.

(3) The operator shall ensure that any hoisting system used at the mine—

- (a) for the carriage of persons, has a braking capability that is adequate and in accordance with the standards required by the hoisting rules,
- (b) is designed and maintained to prevent the travelling speed exceeding the rate required by the hoisting rules,
- (c) has braking systems that can be operated either automatically or manually, in accordance with the hoisting method in use,
- (d) has brakes that are applied automatically in the event of an electrical, mechanical or other fault or failure, and
- (e) can be brought safely to rest in the event of a failure of any component of the braking system.

PART 12

PROVISION FOR PARTICULAR RISKS AT MINES

Protection from explosion risks

114. The operator shall ensure that necessary measures are taken to prevent the formation, accumulation and ignition of explosive atmospheres at a mine.

Gassy mines

115. The operator, where any flammable gas or a mixture of gases naturally occurring at the mine, in this Part referred to as “firedamp”, is likely to be released in such concentrations and quantities that the risk of formation of an explosive atmosphere cannot be excluded shall ensure that—

- (a) the main ventilation is to be provided by one or more than one mechanical fan,
- (b) work activities take account of any possible emission of firedamp and risks of ignition of firedamp and that steps are taken so that the risks are, so as far as is reasonably practicable, eliminated,
- (c) lights, detonators and explosives are safe for use,
- (d) auxiliary ventilation is limited to development and salvage work and to places with a direct connection to the main ventilation,
- (e) working faces are not ventilated by auxiliary systems unless appropriate additional measures are taken to ensure the health and safety of workers,
- (f) ventilation measurements required by the ventilation rules are supplemented by firedamp determinations,
- (g) where required by the safety statement, the firedamp levels in return airways from production areas using mechanised extraction or underpinning, and at the head ends of mechanised blind end workings and any other place of work identified in the safety statement are continuously monitored,
- (h) only explosives and initiating devices specifically for gassy mines are used,
- (i) automatic alarms and devices that isolate power supplied from electrical installations and cut off fuel supplies to internal combustion engines when the concentration of firedamp reaches a level identified in the safety statement are provided,
- (j) having or carrying smoking materials including tobacco, lighters and matches which may be used to produce a flame is prohibited, and

- (k) flame cutting, welding and other similar operations are only carried out in exceptional circumstances and subject to specific measures to ensure the safety and health of persons at the mine.

Mines containing flammable dust

116. The operator of a mine which is susceptible to flammable dust liable to propagate an explosion shall ensure that—

- (a) only explosives and initiating devices required by Regulation 115 (h) are used,
- (b) having or carrying smoking materials including tobacco, lighters and matches which may be used to produce a flame is prohibited,
- (c) flame cutting, welding and other similar operations are only carried out in exceptional circumstances and subject to specific measures to ensure the safety and health of persons employed at the mine,
- (d) adequate steps are taken to reduce flammable dust deposits and to remove, neutralise or bind such dust, and
- (e) the propagation of flammable dust or firedamp explosions which are liable to trigger further flammable dust explosions are prevented, or, where this is not reasonably practicable, limited by installing a system of appropriate explosion barriers in such locations as are identified in the safety statement.

Protection from incendive sparking at gassy mines or mines containing flammable dust

117. Where any part of a mine below ground is susceptible to flammable dust liable to propagate an explosion or where it cannot be excluded that flammable gas or a mixture of gases can occur naturally in such concentrations and quantities that there is a risk of formation of an explosive atmosphere, the operator shall ensure, that in that part of the mine procedures are in place to prevent, or where this is not possible minimise, the risks from incendive sparking.

Fires, spontaneous combustion and heatings

118. The operator shall ensure that—

- (a) where appropriate, measures are taken to detect the early signs and prevent the outbreak of spontaneous combustion,
- (b) procedures are in place to minimise the risks to persons employed underground where evidence of spontaneous combustion has been detected,
- (c) the quantity of flammable materials to be taken into underground places of work is limited to no more than is strictly necessary,

- (d) where it is necessary to use hydraulic fluids for the transmission of energy, as far as possible, the following are provided for use at the mine:
 - (i) fluids which are difficult to ignite in order to avoid the risk of fire and its spread;
 - (ii) fluids which satisfy specifications and test conditions relating to fire resistance and hygiene criteria, and
- (e) where hydraulic fluids are used which do not satisfy the specifications, conditions and criteria referred to in paragraph (d)(ii), precautions are taken to avoid the increased risk of fire and its spread,

Gas outbursts, rock bursts and water inrushes

119. (1) The operator shall ensure that an operating plan specifying measures to be taken in a risk zone below ground in the mine susceptible to gas outbursts, with or without the projection of minerals or rocks, rock bursts or water inrushes, is contained in the safety statement and is implemented as appropriate, so as to ensure, as far as possible, a safe system of work and the protection of employees.

- (2) The measures referred to in paragraph (1) shall include measures to—
 - (a) identify the risk zones,
 - (b) protect persons employed in workings approaching or traversing these zones, and
 - (c) control the risks concerned to those persons.

Protection from harmful environments

120. The operator shall ensure that—

- (a) where harmful substances accumulate or may accumulate in the atmosphere, any of the following are taken in such a way so that workers are not at risk:
 - (i) measures to suppress the harmful substances at source;
 - (ii) measures to extract the harmful substances at source or remove them;
 - (iii) measures to dilute accumulations of harmful substances,
- (b) any measure taken is capable of dispersing harmful substances in such a way that persons at work are not at risk,
- (c) sufficient and appropriate breathing and resuscitation equipment is provided and made available in areas where there is a particular risk that persons may be exposed to atmospheres which are harmful to health,

- (d) in any place of work referred to in paragraph (c), all persons who may be exposed to atmospheres which are harmful to health are trained in the use of breathing and resuscitation equipment and such equipment shall be readily available, suitably stored and maintained, and
- (e) where toxic gases are or may be present in the atmosphere, the protective equipment to be provided and the preventive measures to be taken are specified in the safety statement.

PART 13

SAFETY PROVISIONS FOR ANCILLARY SURFACE INSTALLATIONS

Definition of "place of work" (Part 13)

121. In this Part "place of work" means premises at the surface of the mine—

- (a) housing workstations, and
- (b) to which persons at work have access, including premises providing accommodation, rest and sanitary facilities.

Stability and solidity

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

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

so as to withstand any anticipated environmental forces and to be safe and without risk to health.

Floors, walls and ceilings of rooms

123. The operator shall ensure that at a place of work—

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

- (d) transparent or translucent walls, and in particular, glass partitions, in the place of work or in the vicinity of outdoor workstations and traffic routes, are—
 - (i) clearly indicated, and
 - (ii) made of safety material, or are shielded from such place of work or workstations and 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, and
- (e) surfaces, walls and ceilings are cleaned on a basis that maintains an appropriate standard of hygiene.

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

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

- (a) rooms have sufficient surface area, height and air space to allow persons at work to perform their work without risk to their safety, health or welfare, and
- (b) the dimensions of unoccupied space at any workstation allow persons at work sufficient freedom of movement and enable them to perform their work safely.

Roofs, windows and skylights

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

- (a) windows, skylights and ventilation devices—
 - (i) are designed so that they can be opened, adjusted or secured in a safe manner, and
 - (ii) are not positioned so as to constitute a hazard to persons at work when open,
- (b) windows and skylights can be cleaned without risk, and
- (c) access to roofs made of materials of fragile material shall not be permitted unless equipment is provided to ensure that work can be carried out in a safe manner.

Doors and gates

126. 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) transparent or translucent surfaces in doors and gates that are not made of safety material, and in respect of which there is a danger that persons at work may be injured in the event of a door or gate shattering, 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—
 - (i) are appropriately marked,
 - (ii) can be opened from the inside at any time without special assistance, and
 - (iii) can be opened when the place of work is occupied,
- (h) doors for pedestrians in the immediate vicinity of any gates intended essentially for vehicle traffic, (unless it is safe for pedestrians to pass through) are provided that are clearly marked and left permanently unobstructed,
- (i) mechanical doors and gates are provided that—
 - (i) function in such a way that there is no risk of accident to persons at work,
 - (ii) are fitted with easily identifiable and accessible emergency shutdown devices, and
 - (iii) unless they open automatically in the event of a power failure, can also be opened manually,and
- (j) where chains or similar devices are used to prevent access to any place, signs are provided that are clearly visible and appropriately identify the devices and indicate any prohibition or warning relating to the prevention of access.

Ventilation in rooms

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

- (a) steps are taken so 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

128. 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 14

HEALTH

Health surveillance

129. For the purposes of section 22 of the Act of 2005, an employer at a mine shall make health surveillance available to an employee before he or she is assigned to duties related to a particular work activity at the mine.

Medical Examinations

130. (1) The operator shall ensure that—

- (a) arrangements are made for the medical examination and certification of fitness for work by a registered medical practitioner (hereinafter referred to as a “doctor”) of every person to be employed at the mine before the person is assigned to duties related to a particular work activity in the mine,
- (b) thereafter, as regards any person employed in a mine, arrangements are made for the medical examination and issue of a certificate of fitness for work of that person by a doctor at intervals of not more than twelve months,

- (c) where a certificate referred to in paragraph (b) imposes conditions or limitations in relation to the employment of persons in any particular capacity or work, the person to whom it relates is required to be further medically examined after a period specified in the certificate,
 - (d) every medical examination carried out for the purpose of this Regulation shall take account of the work activities of the individual,
 - (e) every medical examination carried out for the purpose of this Regulation shall be at the expense of the operator, and
 - (f) every certificate issued under this Regulation shall be kept in accordance with Regulation 22.
- (2) The operator of a mine shall, before the employment of a person at a mine, notify—
- (a) the doctor by whom that person is to be examined, of the name, address and age of the person, and
 - (b) the person to be examined to attend that doctor for an examination on a day and time specified in the notice, or another day that is agreed in writing between the doctor and person concerned.
- (3) The operator shall ensure that a person is not employed at a mine unless a medical examination has been carried out and a current certificate of fitness has been issued under these Regulations.

Health hazards

131. (1) The operator shall ensure that, 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, appropriate preventive measures are taken at the mine 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

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

Stationary internal combustion engines and exhaust gases

133. The operator shall ensure that—

- (a) stationary internal combustion engines are not used at the mine in any enclosed or confined place, unless specific provision is made for conducting the exhaust gases from the engine into the open air or ventilation airway, or
- (b) any enclosed or confined place is adequately ventilated so as to prevent danger to health from exhaust gases referred to in paragraph (a).

PART 15

WELFARE

Shelters and accommodation for clothing and taking meals

134. (1) The operator shall ensure that the following are provided at or in the immediate vicinity of the mine 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, which contains, where practicable, adequate and suitable means of enabling such persons to warm themselves and dry wet clothing;
- (b) adequate and suitable enclosed accommodation for the deposit of protective clothing used for work and kept, when not in use, at or in the immediate vicinity of the mine with, where practicable, adequate facilities for drying such clothing if it becomes wet;
- (c) adequate and suitable accommodation for the taking of meals affording protection from the weather, which includes sufficient tables with impermeable surfaces and seats with backs;
- (d) facilities for boiling water and, where there are more than 5 persons at work at a mine and heated food is not otherwise available at the mine, adequate facilities for heating food;
- (e) an adequate supply of drinking water at one or more than one convenient place.

(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) In determining whether accommodation provided under subparagraph (1)(c) is adequate, account shall be taken of the number of persons who are likely to use such accommodation at any one time.

(4) All accommodation provided by the operator in accordance with this Regulation shall—

- (a) be properly ventilated, adequately lighted and kept in a clean, hygienic and orderly condition, and
- (b) not be used for the deposit or storage of materials or plant, other than as may be required for the purposes of the accommodation.

Changing rooms and lockers

135. (1) An operator shall ensure—

- (a) if persons at work are required to wear special work clothes and if, for reasons of health or propriety, they cannot be expected to change in another area, that appropriate changing rooms are provided which are—
 - (i) easily accessible,
 - (ii) of sufficient capacity, and
 - (iii) provided with seating,
- (b) that separate changing rooms are provided for men and women, or procedures are in place to ensure separate use of changing rooms by men and women, and
- (c) in changing rooms, that adequate facilities for drying wet or damp work clothes are provided.

(2) If 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 the work clothes to be kept in a place separate from personal clothing and effects.

(3) If changing rooms are not required under paragraph (1), the operator shall provide or cause every person at work is to be provided with a place to store his or her own clothes and personal effects.

Washing facilities

136. (1) The operator shall ensure that adequate and suitable facilities for washing are provided appropriate to the numbers of persons at work and the duration and nature of the work at the mine, including—

- (a) troughs or washbasins which have a smooth and impervious internal surface,
- (b) 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 are provided that are properly ventilated, adequately lighted and kept in a clean, hygienic and orderly condition, and conveniently accessible from the accommodation for taking meals,
- (b) separate washbasins are provided for men and women, or procedures are in place to ensure separate use of washing facilities by men and women,
- (c) showers are provided for persons at work, if required by the nature of the work or for health reasons,
- (d) separate shower rooms are provided for men and women, or procedures are in place to ensure separate use of shower rooms by men and women,
- (e) shower rooms provided 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 or warm running water, and
- (f) where rooms containing showers or washbasins are separate from changing rooms, there is easy access between the two.

Sanitary conveniences

137. (1) The operator shall ensure that adequate and suitable toilets are provided that are kept in a clean, hygienic and orderly condition.

(2) The operator shall ensure that every toilet—

- (a) other than a toilet provided in a refuge chamber, is provided with a proper door fastening and is partitioned off to secure privacy,
- (b) other than a toilet provided in a refuge chamber, is provided with sufficient ventilation that does not communicate with any workroom or room for the taking of meals except through the open air or through an intervening ventilated space,
- (c) is under cover, and
- (d) is arranged so as to be conveniently accessible to persons at work at all times while they are at the mine and is, where practicable, convenient to the washing facilities.

(3) The operator shall ensure that, other than a toilet provided in a refuge chamber, separate toilets are provided for men and women, or procedures are in place to ensure separate use of toilets by men and women.

Safe access to places where facilities are provided

138. The operator shall ensure that—

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

Pregnant women and nursing mothers

139. The operator shall ensure that pregnant and breastfeeding persons at work are able to lie down to rest in appropriate conditions.

Persons with disabilities

140. The operator shall, where necessary, ensure that the mine 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 persons with disabilities.

Rest rooms

141. The operator shall ensure that—

- (a) where necessary, having regard to the number of persons at work who may require to rest and the type of activity carried out, one or more than one rest room is provided, of sufficient dimensions and equipped with an adequate number of tables and with seats with backs, and
- (b) where a rest room is not provided and working hours are regularly and frequently interrupted, one or more than one other room is provided in which persons at work can stay during such interruptions, where this is required for their safety or health.

SCHEDULE 1

Regulations 8(1) and 8(3)

NOTIFICATIONS TO AUTHORITY

FORM MR 1

1. Notification of Appointment or Change of Operator, Mine Manager, Commencement or Permanent Cessation of Mining Operations.

Name of Mine	
Address of Mine	
Notifications to the Authority	
<p>I hereby give notice of:</p> <p>(a)- Appointment of operator</p> <p>(b)- Appointment of mine manager/temporary mine manager</p> <p>(c)- Commencement of mining operations</p> <p>(d)- Permanent cessation of mining operations.</p> <p><i>(select as appropriate)</i></p>	
Name of Person or Company under which the business is carried on:	_____
Signature:	_____
Position At The Mine:	_____
Date:	_____

2. Notification of a Dangerous Occurrence at a Mine

Form MR 2**FORM OF NOTIFICATION OF A DANGEROUS OCCURRENCE AT A MINE**

Name of Mine	
Address of Mine	
Telephone Number	
Date and Time Of Dangerous Occurrence	
Location at The Mine Where The Dangerous Occurrence Occurred	
Approximate Number Employed At Establishment	
What Activity was Being Undertaken At The Time of The Dangerous Occurrence	
Circumstances Of The Dangerous Occurrence (Description And Cause)	

Details of Notifier

Name: _____	
Contact Details	
Phone	
Mobile	
E-Mail	
Date Of Notification	
Signature: _____	
Position At The Mine: _____	
Date: _____	

SCHEDULE 2*Regulations 16, 25(1)(b) and 26***INSPECTION REPORT FORMS****SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018****FORM MR 3**

REPORTS OF INSPECTIONS PRIOR TO THE COMMENCEMENT OF WORK By Shiftboss or appointed person pursuant to Regulation 25 (1) (a)	
Name and address of mine:	
Working area:	
Date:	_____
I certify that I have myself inspected every part of the above-named area/place of work that is required to be ventilated and that the following is a full and accurate report of the condition of the area/ place of work as ascertained by me:	
Name	_____
Signature	_____
*If gas was found state place and circumstances of each occurrence and action taken.	
Conditions of Ventilation:	
*State the actual conditions. If there are any defects or interruptions give particulars, say how they were caused and any action taken.	
Condition of the Roof and Sides:	
State actual condition of (a) working faces and (b) roads, with location of any unsafe place and any action taken.	

Other Sources of Danger and Remarks:	
Inspection Commenced _____ : _____ a.m./p.m. * Inspection Completed _____ : _____ a.m./p.m. * <i>*(delete as appropriate)</i>	
Signed Shiftboss or appointed person in charge of the working areas:	
Time of commencement of work: _____ : _____ a.m./p.m. * <i>*(delete as appropriate)</i>	
Name of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018 Signature of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018	_____ _____
Date: _____	

**SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018**

FORM MR 4

SHIFTBOSS GENERAL INSPECTION REPORTS pursuant to Regulation 25 (1) (b)	
Name and address of Mine:	
Period covered: _____ : _____ a.m./p.m. * to _____ : _____ a.m./p.m. * <div style="text-align: right;"><i>*(delete as appropriate)</i></div>	
GENERAL REPORT BY SHIFTBOSS IN CHARGE OF WORKING AREA	
PART A:	
Date: Working Area	_____
Name of any substitute appointed under Regulation 16 and period for which he was appointed.	_____ _____ to _____
Times at which inspections required were made.	Commenced _____ : _____ a.m./p.m. * Completed _____ : _____ a.m./p.m. * Completed _____ : _____ a.m./p.m. * <div style="text-align: right;"><i>*(delete as appropriate)</i></div>
Nature of Inspection and Place or Places Inspected.	

PART B	
Time at making of this report	_____ : _____ a.m./p.m. * *(delete as appropriate)
I certify that this report is a full and accurate record of the performance of all duties during my shift and of everything known to me that occurred which is material to the proper working of the mine or the safety or health of persons employed in the working area.	
Report of any defects found/remedial work taken/actions required *If space is insufficient continue report on back of this form	
Shiftboss in charge of the working area:	
Signed:	_____
Name:	_____
Date:	_____
Name of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018	_____
Signature of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018	_____
Date:	_____

**SAFETY, HEALTH AND WELFARE AT WORK (MINES)
REGULATIONS 2018**

FORM MR 5

PART A REPORTS OF INSPECTIONS OF PARTS OF A MINE WHERE PERSONS REGULARLY PASS AND EVERY WALKABLE AIRWAY, TRAVELWAY OR ROAD NOT WITHIN THE WORKING AREAS OF ANY SHIFTBOSS, pursuant to Regulation 26	
Name and address of mine:	
Date of Inspection:	
Time of Inspection:	_____ : _____ a.m./p.m. * <i>*(delete as appropriate)</i>
Place or places inspected:	
Full and accurate report of condition disclosed by inspection, and action taken or necessary to deal with any defect or source of danger:	
Name of competent person making the inspection	_____
Signature of competent person making the inspection:	_____
Name of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018	_____
Signature of person appointed under Regulation 10 of the Safety, Health and Welfare at Work (Mines) Regulations 2018	_____
Date:	_____

SCHEDULE 3*Regulation 51***GEOTECHNICAL ASSESSMENTS****THE FOLLOWING PLANS, RECORDS, REPORTS AND PARTICULARS SHALL BE INCLUDED IN GEOTECHNICAL ASSESSMENT:****Site survey.**

1. An accurate plan on a scale not less detailed than 1:2500 showing-
 - (a) the boundaries of the mine upon which the excavation, tip or lagoon is, or is to be situated,
 - (b) the location of the excavation, tip or lagoon,
 - (c) any adjoining land, strata or structure that might be affected by the excavation, tip or lagoon,
 - (d) old mine workings, known cave systems, active or former landslips, springs, artesian wells, watercourses, mine workings (whether in use or not) and other natural or man-made features, including tunnel pipes or culverts that might—
 - (i) affect the safety of the excavation, tip or lagoon, or
 - (ii) be relevant for the purpose of determining whether mining operations can be carried out safely.

This plan shall be contoured, orientated and correlated to the Ordnance Datum Survey National Grid

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 excavation, tip or lagoon. 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, tip or lagoon showing the existing excavations, 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 1:2500 recording—
 - (a) in relation to an excavation, the design of the excavation, including the overall dimensions or proposed dimensions of the excavation, 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, 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 mining 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.

GIVEN under my hand,
26 April 2018.

PAT BREEN,
Minister of State at the Department of Business, Enterprise
and Innovation.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation)

These Regulations set out requirements with respect to safety, health and welfare in mines, as defined in Regulation 3, and replace a range of provisions formerly applied in the Mines and Quarries Act, 1965 and in various Regulations made under that Act.

The Regulations also retranspose, in relation to mines, the relevant provisions of Council Directive 92/104/EEC² of 3 December 1992 on the minimum requirements for improving the safety and health protection of workers in surface and underground mineral extracting industries. The Regulations further provide that the Safety, Health and Welfare at Work (Extractive Industries) Regulations 1997 (S.I. No. 467 of 1997) no longer apply to a mine as defined in Regulation 3 of these Regulations

The Regulations apply to all mines where persons work and set out duties on the owner, operator, manager and employees at a mine with respect to persons at or in the area immediately surrounding a mine.

The Regulations come into operation on 30 April 2018.

²OJ L404, 31.12.1992, p. 10

BAILE ÁTHA CLIATH
ARNA FHOILSIÚ AG OIFIG AN tSOLÁTHAIR
Le ceannach díreach ó
FOILSEACHÁIN RIALTAIS,
52 FAICHE STIABHNA, BAILE ÁTHA CLIATH 2
(Teil: 01 - 6476834 nó 1890 213434; Fax: 01 - 6476843)
nó trí aon díoltóir leabhar.

DUBLIN
PUBLISHED BY THE STATIONERY OFFICE
To be purchased from
GOVERNMENT PUBLICATIONS,
52 ST. STEPHEN'S GREEN, DUBLIN 2.
(Tel: 01 - 6476834 or 1890 213434; Fax: 01 - 6476843)
or through any bookseller.

€20.32



Wt. (B33401). 285. 4/18. Essentra. Gr 30-15.