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IT is hereby notified that the Minister of Mines has, in terms of section 427 of the Mines and Minerals Act [Chapter 165], made the following regulations:—

PRELIMINARY

Title and application

1. (1) These regulations may be cited as the Mining (Management and Safety) Regulations, 1990.

(2) Except where the contrary intention appears from the context or specific provision is made to the contrary, the provisions of these regulations shall apply to all mines.

Interpretation

2. In these regulations—

“appointed” means appointed in writing by the person responsible for making such appointment and countersigned in ink by the person accepting such appointment;

“approved” means approved in writing by the Chief Government Mining Engineer;

“authorized person”, in relation to a particular function or power, means a competent person authorized in writing by the manager of the mine concerned to discharge that function or exercise that power;

“automatic winding plant” means any hoist or other appliance for the conveyance of persons, material or mineral by means of a cage, skip or other means of conveyance in any shaft or winze where the driving machinery is normally operated automatically, without a driver in attendance, but shall not include any lifting machine, elevator, endless rope haulage or scraper winch installation;

"blasting licence" means a valid licence to conduct blasting operations and re-entry procedures issued in terms of of the law relating to explosives;

"boiler" means—

(a) any apparatus adapted to convert continuously any liquid into steam, vapour or gas at a pressure higher than that due to the atmosphere, where the heat is derived from a source other than steam or the ambient temperature of the atmosphere, which apparatus shall be deemed to include any super-heater or economizer which is an integral part thereof;

(b) any economizer or separately-fired super-heater neither of which is an integral part of such apparatus;

and includes any fittings and appurtenances thereof:

Provided that—

(i) where any apparatus consists of a combination of two or more parts, each of which is capable of adaption for use as a separate boiler by the closing of one or more stop valves or stop cocks, each part shall be deemed to be a separate boiler;

(ii) any steam generator fitted with a standpipe or riser vented direct to atmosphere the vent of which is of such dimensions as to prevent the development of any pressure exceeding thirty-five kilopascals within the vessel shall, if no valve or other obstruction is inserted in the standpipe or riser to prevent the vessel from freely venting to atmosphere, be deemed not to be a boiler;

(iii) any apparatus in which the product of the maker's intended maximum working pressure in kilopascals and the volume in cubic metres does not exceed ten shall be deemed not to be a boiler;

"competent person", in relation to any duty or function means a person who has had adequate training and experience to enable him to perform that duty or discharge that function without avoidable danger to himself or any other person. Competent persons shall be appointed in terms of section 7.

"conveyance", in relation to a winding plant means any cage, skip, bucket, bale, kibble, cocopan body, material trailer, counter-poise or any other receptacle or structure attached to or suspended from a winding rope and intended to serve as a means of transport or counter-balance;

"engine" means any appliance or combination of appliances by which power, other than man or animal power, can be applied to do mechanical work;

"fiery mine" means any mine or part of a mine determined to be a fiery mine in terms of section 88.

"form" means the appropriate form prescribed by the First Schedule;

"in ink" means typewritten or written in ink or with a ball point pen or in some other manner so as to be indelible;

"inspector" means an inspector or sub-inspector of mines appointed in terms of the Act;

"in writing" means in all cases in ink;

"machinery" means any engine, boiler or appliance or combination of appliances which is used or intended to be used for generating, developing, receiving, storing, converting, transforming or transmitting any form of power or energy or for conveying persons, material or mineral and which is situated at a mine and used or intended to be used in connexion with operations at and pertaining to such mine;

"manager", in relation to a mine, means the person appointed as or deemed to be the manager of that mine in terms of Part I and includes any person appointed in terms of section 16 to act as the manager of that mine;

"material" means anything whatsoever conveyed by means of a winding plant other than persons, mineral or rock;

"miner in charge", in relation to any section or part of a mine, means the person appointed to be miner in charge thereof in terms of section 8;

"mining" means the process of extracting or obtaining any mineral by any mode or method, or any purpose directly or indirectly connected therewith or incidental thereto;

"official", in relation to any section or part of a mine, means the manager or a competent person appointed in terms of section 7 to assist in the control, management and direction thereof;

"owner", in relation to a mine, means the person who is actually entitled to undertake the work on the mine, whether he is the holder or lessee or assign of the rights of such holder;

"pressure vessel" means any vessel in the interior or jacket of which a pressure of more than thirty-five kilopascals gauge pressure may obtain but does not include—

- (a) a boiler;
 - (b) a vessel in which the pressure is exerted by a liquid harmless to the vessel the temperature of which does not exceed the boiling point of the liquid at atmospheric pressure, if the vessel is such that a cushion of gas or vapour cannot form above the liquid;
 - (c) the working cylinder or chamber of a steam, heat or air engine or any transmitting column or pipeline;
 - (d) a portable gas container;
 - (e) a vessel in which the maximum working gauge pressure exceeds thirty-five kilopascals but in which the product of the working gauge pressure in kilopascals and the capacity in cubic metres does not exceed ten.
- "raise" means any tunnel having an inclination above the horizontal in the direction of working of more than five degrees, but does not include a shaft;
- "ramp" means any tunnel at an inclination of more than

five degrees above the horizontal in which self-propelled trackless vehicles move;

"shaft" means any tunnel having—

(a) a cross-sectional dimension of three metres or more; and

(b) an inclination to the horizontal of—

(i) fifteen degrees or more; or

(ii) less than fifteen but more than ten degrees, if the speed of traction therein may exceed one hundred and fifty metres per minute;

"small hoist" means any machine or apparatus which is—

(a) used for the raising or lowering of men, material or mineral in any shaft or winze; and

(b) driven by an engine or motor developing not more than fifty kilowatts and having a speed of traction of not more than one hundred and fifty metres per minute;

"steeply inclined", in relation to shafts or other underground excavations, means having an inclination of thirty-five degrees or more to the horizontal;

"stope" means an underground excavation made in the removal of any ground or mineral, other than coal, but not include an excavation made for an engine room or pump chamber or for development purposes such as shafts, drives, winzes, raises and ramps;

"the Act" means the Mines and Mineral Act [Chapter 165];

"underground" means any working beneath the surface of the ground, access to which is by means of a ramp, adit, shaft, raise or winze;

"ventilating district" means such part of a mine as has an independent intake commencing from the main intake aircourse and an independent return airway terminating at the main return aircourse;

"waterblast" means an appliance by means of which water is continuously projected in the form of a spray by means of compressed air;

"winding plant" means any hoist, machinery or apparatus used for raising or lowering of men, material or mineral in any shaft or winze but does not include any elevator, endless rope haulage, scraper winch installation or any lifting machine as defined in section 185;

"winze" means any tunnel having an inclination below the horizontal in the direction of working of more than five degrees, but does not include a shaft;

"workings" includes all portions of a mine whether on surface or underground which have been excavated, whether abandoned or not, and all portions of a mine whether on surface or underground in the process of excavation.

PART I

MANAGEMENT AND RESPONSIBILITY IN MINES

Manager to be appointed for every mine

3. (1) Every mine shall be under the management, control and direction of a manager appointed in terms of this Part.

(2) No mining or allied operations shall be carried out at any mine for a period exceeding seven days unless a manager has been appointed for that mine in terms of this Part.

(3) Subject to subsection (4), not more than one manager shall be appointed in respect of any mine.

(4) Where, in his opinion, the extent of any mine warrants it or special circumstances exist, the Chief Government Mining Engineer may authorize or require the appointment of more than one manager.

(5) A manager authorized or required to be appointed in terms of subsection (4) shall be appointed for a particular portion of the mine and shall be responsible for the management, control and direction of such portion.

(6) Joint control of any mine or any portion of a mine shall not in any case be exercised by two or more managers.

(7) No person shall be appointed manager of more than one mine without the written approval of an inspector.

Appointment of manager

4. (1) The manager of a mine shall be appointed—

(a) in the case of a mine which is worked by the registered holder thereof either personally or through a servant or agent, by such registered holder or his agent;

(b) in the case of a mine which is worked on tribute, by the tributor;

(c) in the case of a mine which is worked by or on behalf of a partnership or company, by the accredited agent appointed in terms of subsection (3) of section 62 of the Act;

(d) in any case not falling within paragraph (a), (b) or (c), by the person for whose benefit the mining operations are conducted.

(2) No person who is responsible for the appointment of a manager in terms of subsection (1) shall carry on mining or allied operations for a period exceeding seven days without appointing a manager.

Certificate of appointment of manager and register of managers

5. (1) A certificate of the appointment of a manager shall, within seven days of the appointment, be forwarded by the person making such appointment to an inspector of the mining district in which the mine concerned is situated.

(2) The certificate forwarded in terms of subsection (1) shall be endorsed by the appointee signifying his acceptance of the appointment.

(3) If the Chief Government Mining Engineer, after consultation with an inspector is not satisfied, having regard to the nature of the mining operations being or to be conducted on a mine, that the person who has been appointed as the manager of that mine in terms of this Part—

(a) is sufficiently able to read and write English or sufficiently conversant with the provisions of the Act, these regulations and any law relating to explosives; or

(b) has sufficient knowledge, experience and ability;

to be the manager of the mine, he may in writing notify the person who made the appointment accordingly and require him, within

such period as the Chief Government Mining Engineer may specify, to appoint some other person as manager of the mine, and thereupon such first-mentioned appointment shall become void and of no force or effect.

(4) Any person aggrieved by a decision of the Chief Government Mining Engineer in terms of subsection (3) may appeal against that decision to the Minister, who may confirm, vary or set aside the decision.

(5) Whenever a person appointed to be the manager of a mine in terms of this Part ceases for any reason to be the manager of that mine, the person responsible in terms of section 4 for the appointment of his successor shall immediately give written notification, to an inspector of the mining district in which the mine is situated, of the fact that such first-mentioned person has ceased to be the manager of the mine.

(6) There shall be maintained in respect of each mining district in the manner directed by the Chief Government Mining Engineer a register showing the person for the time being appointed in terms of this Part as manager of every mine situated in that mining district.

Person deemed to be manager where no manager appointed

6. During any period where no manager has been appointed for a mine, the person responsible for such appointment in terms of section 4 shall be deemed to be the manager of the mine.

Appointment of competent persons

7. (1) Subject to subsection (2)—

- (a) the manager of a mine may appoint in writing one or more competent persons to assist him in the operation, control, management and direction of the mine, and every such person shall, to the extent clearly defined in his letter of appointment, have the same responsibility under these regulations as the manager;
- (b) the Chief Government Mining Engineer may require the appointment of one or more competent persons and subordinate managers at any time when in his opinion, this is necessary:

Provided that the appointment of persons in terms of paragraphs (a) and (b) shall not be taken to relieve the manager of any personal responsibility under these regulations.

(2) In every case where the activities at a mine involve blasting operations, either on surface or underground, the manager of the mine—

- (a) may, if he is the holder of a blasting licence; and
- (b) shall, if he is not the holder of a blasting licence; appoint one or more competent persons to supervise such blasting operations;

Provided that all persons so appointed shall be holders of the appropriate class of blasting licence.

(3) Any appointment made in terms of subsections (1) and (2) shall be entered in ink in a register kept expressly for the purpose, which shall include—

- (a) the name of the person appointed; and
- (b) particulars of his appointment; and
- (c) the extent of his responsibilities under these regulations.

(4) Entries in the register referred to in subsection (3) shall be signed by the manager and the person appointed, and unsigned entries shall be of no force or effect.

Appointment of miner in charge

8. (1) The manager of a mine or an official may appoint a competent person to be the miner in charge of a specified section or part of a mine.

(2) Any appointment made in terms of subsection (1) shall be entered in ink in a register kept expressly for the purpose which shall include—

- (a) the name of the person appointed; and
- (b) the section or part of the mine under his charge.

(3) Entries in the register referred to in subsection (2) shall be signed by the person making the appointment concerned and the person appointed, and unsigned entries shall be of no force or effect.

Responsibilities of manager

9. (1) The manager of a mine shall—
 - (a) comply with and enforce the requirements of these regulations and any lawful order given by an inspector in the interests of safety, health and discipline and ensure that they are observed by every person employed on the mine;
 - (b) appoint such persons in terms of sections 7 and 8 as may be necessary to assist him to comply with and enforce observance of these regulations and any lawful order given by an inspector;
 - (c) take all reasonable measures to provide for the safety and proper discipline of persons employed at the mine;
 - (d) as soon as is practicable after the occurrence of a breach of any provision of these regulations—
 - (i) report such breach to an inspector; or
 - (ii) take such other disciplinary steps as that inspector may have directed or approved;
 - and in any event cause particulars of such breach and of any disciplinary steps taken to be entered in ink in a register kept for the purpose, which shall be open for inspection at all reasonable times by the inspector;
 - (e) cause the times of the working shifts and of blasting operations in every section of the mine to be so arranged that workmen shall not be exposed to fumes and dust from blasting;
 - (f) provide, or cause to be provided, underground, such waiting places as may be necessary for the use of workmen prior to entering their working places, ensure that such waiting places are at all times clearly marked and, subject to subsection (2), ensure that the miner in charge or blasting licence holder who is responsible for the safety of those working places is the first person to enter such working places and all approaches thereto;
 - (g) ensure that—
 - (i) there is in force a system to enable a determination to be made of the number of persons in the

- underground workings at any time;
- (ii) any person who knowingly fails to conform to any systems in force in accordance with subparagraph (i) shall be guilty of an offence;
- (h) not allow any—
 - (i) miner or competent person to be placed in charge of a complement of workmen if, taking into account the nature or position of the working places, such miner or competent person is unable efficiently to supervise the workmen during his working shift in accordance with the requirements of these regulations;
 - (ii) miner to have charge of more working places or machine drills or persons than may be determined or approved by the Chief Government Mining Engineer at any mine or section of a mine where, in the opinion of the Chief Government Mining Engineer, such determination or approval is necessary in the interests of safety and health;
- (i) wherever necessary, provide and maintain in working order, both underground and on the surface, adequate and suitable fire-fighting equipment as directed in writing by an inspector, which equipment shall be conveniently located and conspicuously marked;
- (j) not permit any incompetent or inexperienced workmen to be employed on dangerous work or work upon the proper performance of which the safety of persons depend;
- (k) on taking over a mine, acquaint himself with such notices as may have been issued to his predecessor or predecessors by an inspector who shall on request supply copies of such notices;
- (l) provide, that when any person employed in or about the mine receives an injury by accident or otherwise, the same shall be reported to him without delay;
- (m) cause all plant, material and other things necessary for compliance with these regulations to be provided and maintained in good order and repair;

(2) Nothing in paragraph (f) of subsection (1) shall be construed as providing—

- (a) that the miner in charge or blasting licence holder may not be accompanied into a working place by such assistants as are necessary to assist in making such working place safe; or
- (b) that an official who is the holder of a blasting licence may not in the execution of his duties enter a working place before the miner in charge or blasting licence holder.

Making of special rules by managers

10. (1) If the manager of a mine wishes special rules not inconsistent with these regulations, made by him for the maintenance of order and discipline and the prevention of accidents at such mine, to have the same force and effect as these regulations, the manager shall send such rules through an inspector to the Chief Government Mining Engineer who shall submit them to the Minister for his approval.

(2) If the Minister approves rules submitted to him in terms of subsection (1), the manager concerned shall be notified accordingly and the rules may then be posted up in a conspicuous place and shall take effect after they have been so posted up for fourteen clear days.

(3) If the Minister considers any rule made in terms of this section unreasonable, unnecessary or otherwise undesirable, he may in writing revoke it or at any time require it to be altered.

(4) An objection to any rules made in terms of this section may be lodged in writing at the office of an inspector and shall be forwarded by him to the Chief Government Mining Engineer who shall submit it, with his remarks thereon to the Minister who may either confirm, revoke or alter the rule concerned.

(5) When, and as long as, rules made in terms of this section are posted up as required by subsection (2) they shall, until they are revoked and save in so far as they are so altered, have the same force and effect as these regulations and any person who contravenes or fails to comply with such rules shall be guilty of an offence and liable to the penalties specified in section 301.

Owner to provide manager with facilities

11. The owner of a mine or his agent shall provide the manager of the mine with the necessary means and shall afford him every facility for complying with the requirements of these regulations.

Responsibility for contravention of regulations

12. (1) Whenever a contravention of any provision of these regulations occurs at a mine, the manager thereof or the person appointed in terms of section 16 to act in the absence of the manager and any person duly appointed in terms of sections 7 and 8, in so far as responsibility in regard to the enforcement of the observance of such provision has been assigned to him shall be deemed to be responsible for such contravention unless he proves to the satisfaction of the court that all reasonable means of enforcing such provision and preventing such contravention were taken.

(2) Any person through whose neglect or wrongful act a contravention of any provision of these regulations occurs shall be deemed to be guilty of such contravention.

(3) The provisions of this section shall be without prejudice to any responsibility or liability on the part of any other person in regard to the provision or contravention concerned.

Deputing of work and supervision

13. No person shall, without the sanction of his official superior—

- (a) depute any other person to do his work; or
- (b) cease to supervise persons under his charge.

Posting up and supply of copies of regulations

14. For the purpose of making known the provisions of these regulations to all persons employed in and about the mine—

- (a) abstracts of the portions of these regulations directly concerning such persons, and any amendments thereof shall be posted up in suitable places at the mine where they can be conveniently read;
- (b) a correct copy of these regulations and any amendments thereof of the abstracts referred to in paragraph

- (a) shall be supplied at cost price to every employee who in the opinion of the manager is required by virtue of his appointment to have specific knowledge of them unless he is already in possession of the same or is unable to read them; and
- (c) the abstracts referred to in paragraph (a) shall have the approval of an inspector and he may order the manager to vary them should he consider this necessary.

Regulations to be explained to illiterate employees

15. Where any employee is unable to read these regulations or the abstract referred to in section 14, the manager shall ensure that such employee is made acquainted with the regulations concerning him or appertaining to his particular occupation and duties.

Appointment of acting manager during manager's absence

16. Whenever a manager is absent from a mine for a period exceeding twenty-four hours, he shall appoint in writing in the manner prescribed in section 7 a suitable person to act as manager during his absence, and during his absence the person so appointed shall be liable for the due observance of these regulations in the same manner as if he were the manager.

Obedience to orders

17. No person shall fail to obey any order or notice given to him in accordance with or for the proper observance of the requirements of these regulations or any order whatsoever given in the interests of safety, health or discipline by any person authorized to give such order.

PART II

SURFACE PROTECTION

Protection of cracks or subsidences

18. (1) When large cracks or subsidences have taken place or are likely to take place by virtue of mining operations, the holder for the time being of the mining location on which mining operations have caused or are likely to cause such cracks or subsidences shall—
- (a) securely fence in or enclose the places where such cracks or subsidences are or are likely to occur;

- (b) keep the same securely fenced in or enclosed;
- (c) prominently display warning notices at all times in suitable positions along such fences or enclosures.
- (2) The holder of any mining location shall securely fence in or enclose and shall keep so fenced in or enclosed the mouths of all shafts or winzes on his location and of all other open surface workings and of all other excavations which may be dangerous to the safety of persons or animals.
- (3) Fencing or enclosures for the purposes of this section shall be to a standard determined by an inspector.

Protection of workings

19. (1) Where mining operations have already taken place and where, in the opinion of an inspector, it is necessary to protect the surface of a mine or of any ground adjoining such mine or any structure of object on or near such surface, safety pillars or other adequate means of support or protection shall be provided of such extent and in such positions as the inspector, with the approval of the Chief Government Mining Engineer, may, by notice in writing to the owner of the mine, direct.

- (2) No such safety pillars or other supports or any portion thereof shall be removed except with the permission in writing of the Chief Government Mining Engineer and then only to such extent and under such conditions as he may fix.

Coal debris, waste products, sand and slimes

20. (1) No person shall deposit coal debris, sand or slimes at any place where cracks or subsidences exist on the surface or at any places where cracks or subsidences are likely to occur as a result of mining operations.

- (2) No person shall destroy heaps of coal debris or other waste products by setting them on fire or fail to take reasonable precautions to prevent coal debris or other waste products which have caught fire from being blown about so as to endanger persons or property.

Cyanide and other chemicals

21. (1) At every mine where cyanide is used there shall be kept in a conspicuous and convenient place a sufficient supply of antidote approved by an inspector for cyanide poisoning.

(2) Antidote for cyanide poisoning shall be kept in a box labelled "Cyanide Antidote" and explicit directions for the use of such antidote shall be affixed inside the lid of the box.

(3) Every vessel used in a confined space for the treatment with acid of zinc slimes from the cyanide process shall be fitted with mechanical agitators and hoods or other appliances of such a nature that the fumes generated in such vessel will be carried safely to external air.

(4) At every mine where cyanide solutions are in circuit, all cocks, taps and pipe outlets from which cyanide solutions are delivered shall be painted red.

(5) No pipe which carries water shall be connected with a pipe which carries cyanide solutions in such a way that the cyanide solutions may enter the water circuit.

(6) At every mine where cyanide or any other dangerous or poisonous chemicals are used they shall be stored in a safe and proper manner so as to be inaccessible to unauthorized persons.

Fencing in of water containing cyanide or other chemicals

22. (1) Every manager shall securely fence in or enclose and keep so fenced in or enclosed any water containing cyanide of calcium, potassium or sodium or other poisonous or injurious solutions of chemicals used in the treatment of minerals, tailings or concentrates in connexion with his location, and shall put up in suitable places notice boards warning persons against using such water.

(2) In no case shall a manager permit water referred to in subsection (1) to escape beyond the limits fenced in or enclosed in accordance with the provisions of that subsection without having previously rendered it innocuous.

(3) Any accident involving persons or live stock as a result of inadequate fencing or failure of tailings dams or dumps shall be immediately reported to an inspector.

(4) Fencing or enclosures for the purpose of this section shall be to the same standard as is prescribed for the purpose of section 399 of the Act.

Mining and treating of arsenical ores

23. Every manager who is mining or treating arsenical ores shall—

(a) ensure that—

(i) all arsenical ores roasted by him are roasted in a properly designed and constructed roasting plant; and

(ii) the arsenious oxide emanating from roasting referred to in subparagraph (i) is collected in adequate flues or by another suitable means; and

(b) take adequate measures to prevent any arsenical compound exposed in or derived from his mining operations from becoming a danger to persons or animals.

Poisonous substances to be confined to location

24. In addition to complying with the provisions of sections 21 and 22, every manager shall take all reasonable precautions and shall comply with such directions as may be given by an inspector for such purposes to ensure that no poisonous or injurious substance is allowed to escape beyond the boundaries of his mining location.

Construction of dams and dumps

25. (1) Every dam and dump which has been approved in terms of section 225 of the Act and is to be built for the purpose of impounding tailings, slimes, sand or water shall be constructed under the supervision of a competent person in such a manner as not to endanger life or limb or to cause damage to property and shall be provided with an adequate penstock, spillway or some other suitable installation.

(2) Every dam or dump constructed in terms of subsection (1) shall be maintained under the supervision of a competent person, who shall at intervals not exceeding three days, carry out inspections of such dam or dump, and shall satisfy himself that there are no signs of breaching or collapse thereof.

(3) If, during the course of an inspection carried out by a competent person in terms of subsection (2), there are observed any possible breaching or collapse of any dam or dump, the competent person shall immediately—

- (a) report his observation to the manager; and
- (b) take appropriate action to prevent, or to minimize the effect of, such breaching or collapse.
- (4) Details of all inspections carried out in terms of subsection (2), and all reports made and action taken in terms of paragraphs (a) and (b) of subsection (3) respectively, shall be recorded in ink in a book to be provided for the purpose, and entries in such book shall be countersigned in ink by an official of the mine at intervals not exceeding seven days, and shall at all times be available for inspection by an inspector.

Design, construction and maintenance of dams, dumps and water channels

26. (1) All water channels, pipelines, spillways, penstocks, dams, tailing dams, dumps, sluices and hydraulic appliances at or ancillary to any mine shall be properly designed and constructed and adequately maintained.

(2) If, in the opinion of an inspector, any works referred to in subsection (1) are unsatisfactory, such maintenance, additions or modifications as are necessary to rectify the situation shall be made.

Precautions against flooding

27. At every mine and at every works ancillary to the mine storm-water trenches and embankments shall, where necessary, be established and kept in good order for the protection from flooding of all machinery and all artificial constructions on the mine such as dams or tailing dams and all underground workings where persons are employed.

PART III

PROTECTION IN WORKING PLACES

Abandoned workings to be examined before entry

28. Where it is necessary to enter abandoned, disused or discontinued workings, no person shall enter or be caused or permitted to enter such workings or any part thereof until an examination has been carried out by a competent person and it has been found that the safety of persons will not be endangered

by the presence therein of noxious or inflammable gases or an atmosphere deficient in oxygen, a dangerous accumulation of water or any other dangerous conditions.

All current workings to be made and kept safe

29. All shafts, drives, raises, winzes, ramps, stopes and other workings of any kind which are in use for travel or work in connexion with the workings of a mine shall be made and kept safe for persons in the mine and, except for the purpose of examining or repairing or making safe, no person shall travel or work or be caused or permitted to travel or work in any part of such workings until it is made safe.

Protection of entrances to workings

30. (1) Every entrance to abandoned, disused or discontinued workings which contain or are likely to contain noxious or inflammable gases or an atmosphere deficient in oxygen or a dangerous accumulation of water shall—

- (a) be kept securely fenced across its whole width to prevent unintentional access of persons to such workings and marked with "No Entry" signs; or
- (b) if an inspector so directs, be sealed by a wall or door of a design and construction approved by the inspector.

(2) Every entrance to every vertical or steeply-inclined shaft, winze, sump, rockpass or other dangerous excavations shall be kept adequately closed by a fence, barrier, door or gate or shall be kept adequately covered so as to prevent persons having unintentional access to or accidentally slipping or falling into such excavation.

(3) No person, other than the manager or a person authorized by him, shall cross or open any fence, barrier, gate, wall, door or cover provided for protection in workings—

- (a) unless he is a miner in charge or other competent person in charge; or
- (b) until he has received definite instructions or permission to do so from the miner in charge or other competent person in charge.

(4) The miner or other competent person in charge shall not cross or open or cause or permit any person to cross or open any fence, barrier, gate, wall, door or cover provided for protection in workings except for the purpose of conducting repairs or other necessary operations and then only if effective precautions for the safety of persons are taken.

Safety in working places

31. At any mine—

(a) no person, other than an official or person of higher rank, who shall be the holder of a blasting licence shall, either at the beginning of a shift or after blasting, enter a working place until he has received definite instructions or permission to do so from the miner or blasting licence holder in charge who for the time being is responsible for the safety of such place;

(b) the miner or blasting licence holder in charge, whose responsibility it is to examine or repair or make safe any working place at the commencement of his shift, shall take all reasonable precautions to ensure that any person assisting him is safeguarded against falls of ground and other dangers while carrying out such work;

(c) if at any time, working place or part thereof becomes or is found to be unsafe during a shift, the miner or blasting licence holder in charge shall take all reasonable measures for making it safe and for safeguarding every person in the working place against such danger as may have arisen;

(d) in making safe a working place the miner or blasting licence holder in charge shall remove or cause to be removed all dangerous, loose or loosened rock or ground, in which work he may be assisted by persons working under his personal supervision and control and, where deemed by him necessary for the safety of such person, in his actual presence.

Precautions during sinking operations: sketch of positions of holes drilled

32. (1) When, at a mine, a shaft or steeply inclined winze is being sunk—

(a) the miner or blasting licence holder in charge shall, at blasting time submit to an official for counter-signature in ink, a signed and dated sketch of the round to be blasted;

(b) an official to whom a sketch has been submitted in terms of paragraph (a) shall, at the commencement of the cleaning shift, pass the sketch to the person in charge of cleaning operations, who shall—

(i) endorse and date the sketch in ink as evidence of its receipt;

(ii) mark thereon in ink the positions of any misfired holes located during cleaning operations; and

(iii) before the commencement of the following shift, return the sketch to the miner or blasting licence holder in charge of drilling operations who shall endorse and date it in ink as evidence of its receipt.

(2) The sketch referred to in paragraphs (a) and (b) of subsection (1) shall be retained at the mine for a period of not less than seven days:

Provided that where sinking operations have been suspended temporarily, the sketch shall be retained for such longer period as will satisfy the requirements of paragraphs (a) and (b) of subsection (1).

Protection against falling objects

33. (1) No loose timber, rock, tools or other articles shall be placed or allowed to remain where they can accidentally fall or be caused to fall or roll down thereby endangering the safety of persons.

(2) Every opening from a vertical or steeply-inclined excavation into a travellingway or working place situated on the lower or dip side of such excavation shall be kept barricaded so that persons travelling or working below or near such opening are effectively protected against danger from falling objects.

Support of roof, hanging or side walls

34. (1) In the working of any mine or part of a mine where, in the opinion of an inspector, the roof, hanging or side walls are

of a nature requiring systematic support, he may give notice to that effect to the manager who, in consultation with the inspector, shall specify the support to be provided and the system according to which it shall be placed.

(2) The manager shall ensure that all persons concerned are made aware of such system and that notices setting out its specifications are posted up at suitable places where they can conveniently be read by such persons.

(3) Any person who fails to comply with specifications of such system shall be guilty of an offence.

(4) If, in the opinion of an inspector, the method of supporting the roof, hanging and side walls in the workings of any mine or part of a mine is unsafe, either by reason of the distances between supports being excessive or for any other reason, he may, by notice, in writing, require the manager to modify the method.

(5) Where the roof or hanging wall necessitates it props shall be provided with the headboards or other suitable means shall be provided to present an adequate bearing surface.

Protection of main ore and waste passes

35. Every main ore pass or waste pass, past which any person may walk, shall be provided with either—

- (a) an adequate cover which shall be closed at all times, other than during tipping, blasting or repair operations; or
- (b) a walk-way on the opposite side to the pass and adequate gates or barriers which, with such walk-way, shall enclose the area around the pass:

Provided that such gates may be opened during tipping operations and, when so opened, such gates shall not permit room for any person to accidentally enter the tipping area.

Provisions for platforms

36. Every bearer, decking and anchorage in any shaft, raise, winze or other opening in or over which a platform is installed shall be—

- (a) of material sufficiently strong and free from patent defect to carry the load for which the platform is intended;

- (b) adequately secured and, where by virtue of the nature of the mining operations the decking is required to be frequently removed, the decking shall be so securely installed as to ensure the safety of any person working on or passing over such platform:

Provided that where the removal of any part thereof is necessary for the purpose of use or repair, adequate precautions shall be taken to ensure the safety of persons working thereat.

Lifelines and lifejackets

37. (1) Subject to subsections (3) and (4), every person, while working on a mine in a place where there is a danger of injury through falling, shall wear a safety chain or like device attached by a lifeline to a secure anchorage so as to provide adequate protection from such danger.

(2) Any safety chain or like device and lifeline referred to in subsection (1) shall be maintained in good order and condition.

(3) An inspector may prohibit the use of any safety chain or like device or lifeline or any type of safety chain or like device or lifeline if, in his opinion, it does not afford adequate protection.

(4) The use of lifeline as required by subsection (1) shall not be compulsory in the case of persons who are engaged in installing or repairing equipment in a vertical shaft or winze or any other work if the manager or an official has given permission to dispense with such use after having satisfied himself that—

- (a) the use of lifelines by the persons concerned would be impracticable and would impede such persons in the safe performance of such work; and
 - (b) such persons have had the training and experience necessary to carry out such work safely; and
 - (c) any such person when engaged in such work and not secured by a lifeline is under the immediate supervision of a competent person.
- (5) No person shall enter or be caused or permitted to enter an accumulation of water in the workings of a mine, other than an accumulation known to be insignificant, unless he is secured by a lifeline or wears a life-jacket.

Slipping of shafts, raises and winzes

38. At any mine where any shaft, raise or winze is directly connected to any other mine working and where such shaft, raise or winze is being enlarged by slipping, the following conditions shall apply—

- (a) where no box is installed, there shall be provided at the lowest lashing point of such shaft, raise or winze an excavation of suitable size capable of accommodating the greatest amount of rock broken in any one blast during slipping operations so as to prevent any possibility of closure of the bottom of such shaft, raise or winze;
- (b) no slipping holes shall be blasted until it has been established beyond doubt that the requirement of paragraph (a) has been complied with;
- (c) no slipping hole shall be blasted until it has been established beyond doubt that the unslipped portion of such shaft, raise or winze is free from any obstruction likely to cause a hang-up or build-up of broken rock;
- (d) in the event of any known or suspected hang-up or build-up of rock, work at the lowest lashing point of such shaft, raise or winze shall cease forthwith and every person at such point shall be withdrawn to a place of safety and no person shall re-enter the danger area for any purpose whatsoever until it has been established beyond doubt that there is no progressive build up of water above the blockage;
- (e) in the event of any build-up of water above the blockage, immediate steps shall be taken to remove such water from above;
- (f) after removal of such water from above the blockage, a competent person or persons may enter the lowest lashing point for the sole purpose of releasing such hang-up or build-up, and all reasonable precautions shall be taken to ensure his or their safety;
- (g) in the event of any such known or suspected hang-up or build-up of rock, work at the slipping face within such shaft, raise or winze shall cease forthwith until such time as the hang-up or build-up has been released;

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- (h) there shall be provided a suitable means of communication whereby the person in charge at the top of such shaft, raise or winze can communicate directly with the person in charge at the lowest lashing point of such shaft, raise or winze;
- (i) no operation shall take place at the lowest lashing point of such shaft, raise or winze until all lashing has been completed at the slipping face of such shaft, raise or winze;
- (j) precautions shall be taken to prevent the inflow of water other than drilling water, into such shaft, raise or winze from any source around the mouth of such shaft, raise or winze;
- (k) precautions shall be taken to ensure that the inflow of any water, from any fissure within the slipped or unslipped portion of such shaft, raise or winze, causes no danger to any person.

Complaints and reports re-safety in mines

39. (1) If any person complains that his working place is dangerous, the miner or competent person in charge shall not cause him or any other person to remain or work in the place complained of until he has made such place safe or has had it examined by an official and has obtained the concurrence of that official as to the safety of such place.

(2) If any person has reason to believe that any part of the mine in which he is working or through which he has to travel to get to his work is in a dangerous condition, he shall at once inform the miner or competent person in charge who shall immediately take any necessary steps to remove the danger if such danger exists.

Safety Complaints Book

40. (1) A book or books shall be kept at or near each shaft, or in some other appropriate place, in which any person shall record in ink any complaint with regard to the safe working of the mine.

(2) Every Safety Complaints Book shall be inspected and initialled in ink daily by the official in charge and at least once a month by the manager and shall be available at anytime for inspection by an inspector.

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Precautions to be observed when workings adjacent to other workings

41. (1) In every working in a mine approaching a place likely to contain a dangerous accumulation of mud, water or gas, boreholes shall be kept in advance of the face and at such an angle from the working as is necessary to ensure safety.

(2) Where underground workings are approaching each other and—

(a) the distance apart has decreased to ten metres, work on one face shall cease during the blasting operations on the other and where the distance apart has decreased to five metres, all work on one face shall cease;

Provided that the provisions of this paragraph shall not apply to bord and pillar workings where regular rectangular pillars are formed of a size not greater than twenty-five metres in any direction.

(b) where one working is within five metres of the other working, the holing point and, where applicable, workings adjacent to the holing point sufficient to ensure safety shall be examined and made safe by the holder of a valid blasting licence, who shall record the result of the examination in ink in a book kept at a place determined by the manager concerned.

(3) Entries in the book referred to in paragraph (b) of subsection (2) shall be—

(a) countersigned in ink by every official who is directly responsible for the working section in which the examination concerned was carried out; and

(b) available at all times for inspection by an inspector.

(4) Where a manager suspects the dangerous approach of workings in an adjoining mine, he shall, in writing, notify an inspector, who shall have the power to order cessation of such work until a survey has been carried out.

Protection from inundation

42. (1) Notwithstanding section 38, the manager shall take all reasonable precautions to ensure that every person employed

in the workings of a mine is safeguarded against inundation by water or mud or a flow of rock, sand, silt or other similar material.

(2) Every drain shall be so constructed, positioned and maintained as to prevent water inadvertently entering a rock-pass.

(3) Every drain and every borehole provided for the purpose of drainage shall, as far as practicable, be kept free from blockages.

(4) No person shall enter or cause or permit any person to enter a rock-pass at the discharge end while it contains water, mud or rock.

(5) Any rock-pass which has become blocked shall be cleared only in accordance with a procedure laid down by the manager or an official.

Use of belt conveyors

43. In every mine, both on surface and underground, in which a belt conveyor is used—

(a) the manager shall draw up and enforce a code of safety practice for the operation, maintenance and patrolling of the conveyor system; and

(b) suitable and adequate means for extinguishing fires shall be available for immediate use along every belt conveyor; and

(c) every belt conveyor shall be equipped with effective means for immediately stopping the conveyor or for signalling to the attendant at the driving head from readily accessible points along the conveyor; and

(d) where two or more belt conveyors are used in series, sequence interlocking shall be provided which will automatically—

(i) stop all other conveyors feeding a conveyor that has stopped; and

(ii) prevent a conveyor starting until the conveyor on to which it feeds is moving; and

(e) if the mine is a coal mine, the following additional requirements shall apply—

- (i) every conveyor belt which is installed or used in the underground workings shall be of incombustible or fire-resistant material; and
- (ii) all reasonable measures shall be taken to prevent coal or coal dust accumulating on or around the moving parts of any belt where friction is likely to cause heating; and
- (iii) every belt conveyor shall be equipped with a device which will stop the drive automatically should the belt break, jam or slip excessively.

Disposal of Combustible waste

44. In any underground workings, waste timber or other combustible matter shall not be piled up and permitted to decay but shall be removed to the surface as soon as practicable.

Penthouses in shafts

45. When any shaft is being sunk below any level which is being worked and is connected to such shaft, it shall be protected below such level by a securely constructed penthouse and, where an inspector considers it necessary, he may direct that further penthouses be constructed in any such shaft and such penthouses shall forthwith be constructed in accordance with his directions.

Prohibition of undercutting and other precautions

46. (1) In any opencast working or quarry, no person shall—
- (a) undercut or permit the undercutting of any face or sidewall; or
 - (b) permit any face or sidewall to have a vertical height of more than one comma five metres unless such face or sidewall is terraced or sloped at an angle sufficient to ensure the safety of persons or is adequately supported:

Provided that this subsection shall not apply where—

- (i) the working or digging is done by mechanical equipment which does not expose the operator of such equipment or any other person to danger from such face or sidewall; or

- (ii) having regard to the natural and physical properties and other circumstances of such face or sidewall, no fall or dislodgement of any earth or other materials is likely to occur so as to endanger persons employed there.

- (2) In every opencast working or quarry, any waste or other loose material and any stone on the surface shall be kept cleared to a distance of at least two metres from the edges of such opencast working or quarry.

- (3) In digging, any trench, pit or other similar working in gravel, clay, soils, tailings, slimes, ash, debris or other such ground or deposit, no person shall—

- (a) undercut or permit the undercutting of any face or sidewall; or
- (b) permit any face or sidewall to have a vertical height of more than one comma five metres unless such face or sidewall is terraced or sloped at an angle sufficient to ensure the safety of persons:

Provided that this subsection shall not apply—

- (i) where such digging is done by mechanical equipment which does not expose the operator of such equipment or any other persons to danger from the face or sidewall; or
- (ii) where permission has been granted in writing by an inspector and under such terms and conditions as may be imposed by the inspector.

- (4) At every trench, pit or other similar workings, all waste and other loose material and stones on the surface shall be kept cleared to a distance of at least one metre from the edge thereof to avoid danger to any person occurring from such waste or loose material falling into such trench, pit or working.

- (5) Notwithstanding subsection (3) in every trench, pit or other similar working where any vertical face or sidewall is of a weak nature, such face or sidewall shall be adequately shored up and additionally, or alternatively, effectively supported.

Wearing of hard hats

47. (1) No person shall enter or remain in or be caused or permitted to enter or remain in the workings of a mine or at any place at a mine where there is danger from falling objects unless he wears a hard hat in good condition and of an approved type.
- (2) Hard hats as required in terms of subsection (1) shall be supplied by the manager.

Foot protection

48. (1) Every person shall wear footwear designed to provide adequate protection for the type of work or activity being performed.
- (2) The footwear referred to in subsection (1) shall be supplied by the manager.

Lamps to be carried underground

49. (1) No person shall enter any underground workings unless he has in his immediate possession an operable lamp of an approved type, and such lamp shall be kept alight and within safe and easy reach of that person at all times.
- (2) Every person in any unilluminated underground part of a mine shall at all times carry the lamp required by subsection (1) on his person and lighted.

When permanent lighting required

50. (1) Suitable and sufficient permanent lighting shall be provided and maintained at the following places underground in regular use—
- (a) every established station, landing or loading place and other similar place in vertical and inclined shafts, winzes and places where the lowering or raising of persons is being carried on;
 - (b) every main tipping place at which any vehicle operates and every place where any vehicle is maintained;
 - (c) every main substation and every substation in which there is inherent danger due to bare conductors or otherwise;

- (d) every room or place made to house winding and main pumping machinery in the proximity of which any person is working or moving about;
- (e) every main crusher station and every main conveyor drive unit.

- (2) Suitable and sufficient permanent lighting shall be provided and maintained at all places on the surface where work is regularly carried out during the hours of darkness or where normal daylight is inadequate for safe working.

Lighting of moving parts of machinery

51. All places where persons are working or moving about in the proximity of winding, driving, pumping or other machinery shall be so lighted that the external moving parts of such machinery whilst in operation are clearly visible.

Lamp-room

52. (1) There shall be provided at the surface of every mine in which portable electric lamps are used underground a separate room to be used as a lamp-room.
- (2) The manager shall ensure that—
- (a) a competent person is appointed to be in charge of the lamp-room; and
 - (b) there is available in the lamp-room a lamp for every person proceeding underground.
- (3) The competent person in charge of the lamp-room shall ensure that no lamp is issued to a person proceeding underground unless it is in proper working order.

Damage to lamps

53. (1) A person to whom a lamp has been issued shall take reasonable steps for its care and maintenance so that it is not damaged, tampered with, destroyed or lost.
- (2) If a lamp is lost, destroyed, tampered with or damaged to the knowledge of the person to whom it was issued, he shall report the occurrence to an official of the mine as soon as practicable but not later than the end of the shift.

- (3) Any person found to have tampered with or willfully damaged a lamp shall be guilty of an offence.

Boundary-pillars

54. (1) On the inside of the boundary-lines of every mine, continuous pillars shall be left standing, the width of which in coal mines shall be not less than fifteen metres and in metalliferous and other mines not less than six metres.

- (2) No person shall mine or be caused or permitted to mine such boundary-pillars unless permission has been obtained in terms of subsection (3) or (4).

- (3) On the joint application of the owners of the adjoining mines, an inspector may give permission to either party to weaken, cut through or work from the respective pillars between such mines.

- (4) In the absence of joint application referred to in subsection (3), the Chief Government Mining Engineer may give permission for the partial working, weakening or cutting through of boundary-pillars under such conditions as he may specify in writing.

- (5) Any work undertaken in terms of subsections (3) and (4) shall be clearly shown on the underground plan required in terms of paragraph (b) of section 78.

PART IV

OUTLETS, LADDERWAYS AND TRAVELLINGWAYS

Every shaft to have ladderway

55. Every shaft or winze in the course of sinking shall, unless written exemption from the provisions of this section has been granted by an inspector, have a safe ladderway, steel rope ladder or chain ladder leading to the collar.

Two outlets to surface

56. (1) Subject to subsection (3), in every mine where there are twenty or more persons employed underground at any one time, there shall be at least two shafts or outlets to surface so that every person employed in the mine shall have at least two separate means of ingress and egress available to him.

- (2) A shaft or outlet provided for the purpose of this section shall not lead to surface at a closer distance than ten metres from any other such shaft or outlet.

- (3) This section shall not apply to—

- (a) any shaft or winze in the course of sinking or in any adit being developed or in places where work directly ancillary to such sinking or development is being carried out;

- (b) the lowest development workings of a mine before connexion is made between such workings and any upper workings that are already connected to the surface, to such an extent and for such distances as an inspector may specify in writing;

- (c) an underground workings if one of the two prescribed shafts or outlets to surface has become temporarily unavailable for use by persons employed in such workings, if every effort is made by the manager to restore availability and the manager has notified an inspector without delay of the attendant circumstances;

- (d) any mine where exemption in writing has been granted by the Chief Government Mining Engineer under such terms and conditions as he may specify.

Requirements for ladderways and ladders

57. (1) Every mine shall be provided with a sufficient number of ladderways permanently maintained to enable all persons to leave every part of the mine with dispatch.

- (2) All ladderways provided in terms of subsection (1) shall—

- (a) be free from obstructions; and
(b) where necessary for the proper protection of persons, be adequately fenced.

- (3) Every ladder used in a mine shall—

- (a) be of strong construction; and
(b) be securely fastened in position and free from obstruction; and
(c) be maintained in good repair; and