

(3) Any person found to have tampered with or wilfully 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

- (d) not be fixed in an overhanging position; and
- (e) project at least one metre above the mouth of every shaft, winze or raise and every platform therein except when strong handrails are fixed at such mouth or platform:

Provided that a ladderway which was installed before 1st January, 1975, and which projects not more than one metre above such mouth shall be deemed to comply with the provisions of this paragraph.

- (4) Permanent ladders regularly used or intended to be regularly used as foot travelling ways shall not be at an inclination of over eighty degrees to the horizontal and when—

- (a) at an inclination to the horizontal of seventy degrees or over platforms shall be provided at distances of not more than ten metres apart and each ladder shall be so arranged as to cover the manhole of the platform on which it rests and shall be securely bratticed off from haulage compartments;

- (b) at an inclination to the horizontal of more than thirty-five degrees and less than seventy degrees, shall be broken every twenty metres by adequate platforms; and securely bratticed off from haulage compartments;

- (c) at an inclination to the horizontal of thirty-five degrees or less, shall be so constructed as to minimize the danger from falling or slipping and shall be securely bratticed off from haulage compartments by means of handrails.

- (5) All ladders in shafts, winzes or tunnels having an inclination to the horizontal of thirty-five degrees or less shall be constructed with steps of wood or concrete or other suitable material, unless an inspector has granted written exemption from the provisions of this subsection.

- (6) No person shall carry or permit any other person to carry heavy tools or heavy objects when travelling on the ladderways in steeply inclined shafts, winzes or raises except in so far as it may be necessary to execute repairs with the tools or objects in such shaft, winze or raise.

- (7) Any person carrying a tool or object or using a tool or object in a ladderway shall ensure that such tool or object is carried or used in such a manner that it cannot be reasonably expected to drop down the ladderway.

Wire ropes

58. Wire ropes or strands of wire ropes shall not be used or caused or permitted to be used for climbing purposes in a mine if the rope or strands are kinked, knotted or contain broken or projecting wires.

Entering and leaving underground workings

59. No person shall enter or leave the underground workings of a mine except by the means of ingress or egress specially provided or set apart for the purpose unless such person is authorized to do so by the manager or an official.

PART V

VENTILATION, GASES AND DUST

Machine drilling not to be done dry

60. (1) Subject to subsection (2), no percussion-machine drilling shall be done dry in any underground part of any mine.

(2) Where the structure of working conditions of a mine are such that due observance of the provisions of subsection (1) is impracticable, an inspector may grant written exemption from the operation of subsection (1) for such period as he may deem necessary, and, if the inspector refuses to grant such exemption an appeal against such refusal may be made to the Chief Government Mining Engineer whose decision shall be final.

Blow-pipes

61. (1) All blow pipes using compressed air shall be fitted with a water connexion.

(2) An inspector may prohibit the use of any blow pipe or any type of blow pipe if, in his opinion, it does not afford adequate protection during use.

(3) No person shall use or cause to be used a blow pipe for cleaning out holes or for cleaning out any truck or skip without a sufficiency of water effectively to allay any dust created during the operation.

Wetting-down

62. (1) All broken rock and coal in the underground workings of a mine shall be wetted-down before removal and kept wet during removal from the working place:

Provided that, if the structure or working conditions of the mine are such that due observance of this provision is impracticable, an inspector may grant written exemption from the operation of this subsection for such period as he may deem necessary.

(2) At the start of each shift before work commences the roof, walls and floor for a distance of at least eight metres from the place where work is to be carried out shall be thoroughly wetted-down:

Provided that an inspector may grant written exemption from the operation of this subsection for such period as he may deem necessary.

(3) If an inspector refuses to grant exemption in terms of subsections (1) and (2), an appeal against such refusal may be made to the Chief Government Mining Engineer whose decision shall be final.

Percussion-machine drills: water supply

63. No person shall use or cause or permit to be used any percussion-machine drill in the underground workings of any mine unless—

- (a) an adequate supply of water flows through the drill steel; and
- (b) the working pressure of the water supply at the machine drill is maintained at one hundred kilopascals or more.

Percussion-machine drills: internal water feeds

64. (1) No person shall use or cause or permit to be used any percussion-machine drill fitted with an internal water feed unless such machine is—

- (a) provided with front-head release ports; and
- (b) of an approved design; and
- (c) fitted with a water tube of such length that, when the machine is not operating and the drill steel is inserted into the chuck to its fullest extent, the water tube—

- (i) enters the axial hole in the drill steel shank for a distance of at least twenty-five millimetres; or
- (ii) falls short of the shank of the drill steel by not less than six millimetres and not more than twenty-five millimetres and is perfectly in line with the axial hole of the drill steel.

(2) Every water-tube referred to in subsection (1) shall be maintained in good order so as to comply with the requirements of that subsection.

(3) The Chief Government Mining Engineer may permit, in writing, the use of any particular drill or any type of drill which does not comply with the provisions of subsection (1) if he is satisfied that no danger to health would result.

(4) The Chief Government Mining Engineer may prohibit, in writing, the use of any particular percussion-machine drill or any type of percussion-machine drill if, in his opinion, the use of such drill or type of drill might endanger health.

(5) No person shall block or otherwise obstruct any of the front-head release ports of a percussion-machine drill provided in terms of this section and no person shall operate or cause or permit the operation of any such drill if the front-head release ports so provided are partially or totally blocked or otherwise obstructed.

(6) Water to be used for machine drilling or wetting-down shall be clear and odourless.

Waterblasts

65. (1) Where compressed air is available, every working development end which has advanced a distance of eight metres or more shall be provided with a waterblast approved by an inspector for which shall—

- (a) discharge within a distance of not more than fifteen metres of the face being advanced; and
- (b) be applied so as effectively to wet the face and broken rock for at least fifteen minutes after blasting and again for a period of fifteen minutes immediately prior to entry of any person:

Provided that an inspector may, by notice in writing, permit the manager of a mine to vary the provisions of paragraph (a) or (b).

(2) The waterblast referred to in subsection (1) shall be tested daily prior to charging up and, if it is found not to be in order, no further blasting shall take place until it has been repaired.

Ventilation

66. (1) As far as practicable, the ventilating air entering a mine shall be free from dust, smoke or other impurity.

(2) The workings of every part of a mine where persons are required to travel or work shall be properly ventilated to maintain safe and healthy environmental conditions for the workmen and the ventilating air shall be such that it will dilute and render harmless any inflammable or noxious gases and dust in the ambient air.

(3) No auxiliary fan shall be installed or operated underground at any place unless the quantity of air reaching it at all times is sufficient to ensure that any recirculation of air shall not prejudice the supply of adequate ventilation.

No work in harmful air

67. No person shall enter or remain in or be caused or permitted to enter or remain in any part of the workings of a mine if the air in that part contains smoke, gas, fumes or dust which is—

- (a) perceptible by sight, smell or any other sense; and
 - (b) harmful to persons;
- unless he is wearing effective apparatus to prevent the inhalation of such smoke, gas fumes or dust.

Withdrawal of workmen where danger from gas

68. (1) If at any time it is found by the person for the time being in charge of the workings of a mine or any part thereof that, by reason of inflammable or noxious gases present in the workings or such part thereof, the workings or such part thereof, the workings or such part is dangerous, every workman shall be withdrawn by him from the workings or part so found dangerous and the matter immediately reported to the manager or official

in charge who shall not allow any person to resume work therein until he has satisfied himself by personal inspection that the working place is made safe.

(2) Nothing in subsection (1) shall be construed as applying to persons employed in the presence and under the direct supervision of a competent person for the erection of brattice or for other work with a view to the clearing away of inflammable or noxious gases.

(3) Every withdrawal of persons in terms of subsection (1) shall be recorded in ink, in a book provided by the manager, by the person for the time being in charge of the working place or such part thereof.

Action required when person exposed to smoke, gas, fumes, dust or harmful temperatures

69. (1) If at any time a miner in charge or a blasting licence holder becomes aware of the fact that a person has been exposed to conditions arising from excessive amounts of harmful smoke, gas, fumes or dust or from harmful temperatures, he shall—

- (a) take such steps as may be necessary immediately to remove such person from such exposure; and
- (b) ensure that the appropriate official or the manager is informed without delay of the circumstances of such exposure.

(2) Any official or manager receiving information of any person's exposure to conditions referred to in subsection (1) shall immediately take all further steps necessary to—

- (a) ensure the safety and health of that person and of any other person who may subsequently be so exposed; and
- (b) terminate and prevent the recurrence of such conditions.

(3) Any action or steps taken in terms of subsections (1) and (2) shall be recorded in ink in the book as provided for in terms of subsection (3) of section 68, which book shall at all times be available for inspection by an inspector.

Permissible quantities of gas, noxious dust and asbestos dust

70. (1) In the general body of the air where persons are required to work or travel under normal working conditions—

- (a) the amount of carbon dioxide shall not exceed five thousand parts per million of air by volume, nought comma five *per centum*;
- (b) the amount of carbon monoxide shall not exceed one hundred parts per million of air by volume, nought comma nought one *per centum*;
- (c) the amount of oxides of nitrogen shall not exceed five parts per million of air by volume, nought comma nought nought five *per centum*;
- (d) the amount of hydrogen sulphide shall not exceed twenty parts per million of air by volume, nought comma nought nought two *per centum*;
- (e) the amount of ammonia shall not exceed fifty parts per million of air by volume, nought comma nought nought five *per centum*;
- (f) the amount of inflammable gas shall be insufficient to show a distinct gas cap on the reduced flame of an approved flame safety lamp or to give a reading of one comma two five *per centum* on an approved methanometer;
- (g) the concentration of noxious dust shall not exceed such standard as may from time to time be specified by the Chief Government Mining Engineer.

(2)—

- (a) in the general body of the air where persons are required to work or travel under normal working conditions, the maximum permissible quantity of chrysotile asbestos dust shall be two fibres per millilitre per four-hour period;

(b) in this subsection—

“fibre” means the fibre of chrysotile asbestos dust measuring more than five micrometres in length and less than three micrometres in diameter and having a length diameter ratio of at least 3 : 1.

Precautions against harmful dust

71. (1) Where rock, ore, coal or other mineral or mineral compound is reduced in size, screened, moved, handled or otherwise subjected to any process which may produce dust harmful to persons—

- (a) the liberation of such dust into the atmosphere shall be effectively controlled by the use of water or other dust allaying agent or by a dust extraction system; and
 - (b) every building in which any of these processes takes place shall be adequately ventilated and the floor and other surfaces at any place, as well as machinery, shall be regularly cleaned so as to prevent the accumulation of such dust.
- (2) Every drill sharpening shop or other workshop necessary and incidental to the sharpening of drills and any other building or shed where harmful dust may be produced shall be kept clean and adequately ventilated and the liberation of such dust into the atmosphere effectively controlled by use of water or other dust allaying agent or by a dust extraction system.
- (3) Where sand blasting is done, approved protective breathing equipment shall be worn by every person exposed or likely to be exposed to the dust.

(4) Where an inspector is satisfied that any mining operation upon any mine has caused or is likely to cause the presence of dust in such quantity as may be injurious to health, he may, in writing, direct the manager, within such period as shall be specified by the inspector, to install apparatus for the prevention or abatement of such dust to the satisfaction of the inspector.

(5) Without derogation from the responsibility of the manager, such direction shall be deemed to be a direction to the person actually carrying on the business of mining upon the mining location concerned, whether he is the holder or the lessee or assignee of the rights of such holder.

Internal combustion engines underground

72. (1) Except as provided for in subsection (8), no internal combustion engine, other than a mobile diesel engine unit, shall be used underground in any mine.

- (2) No diesel engine shall be used underground—
- (a) in any mine unless there is sufficient ventilation to render harmless the exhaust gases produced;
- (b) in any fiery mine or in any other mine in the workings of which there may be a risk of such diesel engine igniting gas or coal dust unless—
- (i) it is of an approved design and construction; and
- (ii) its use has been permitted in writing by the Chief Government Mining Engineer; and
- (iii) it is used in accordance with such conditions and subject to such restrictions as the Chief Government Mining Engineer may specify in writing.
- (3) Except where otherwise authorized by the Chief Government Mining Engineer, every diesel engine used underground shall be provided with means whereby the air entering the engine is cleaned, the exhaust gases before being expelled are cooled, the concentration of toxic gases in the exhaust gases reduced and the emission of flames or sparks prevented, and those means shall be maintained in an effective condition.
- (4) Where a diesel engine is used underground, samples shall be taken—
- (a) at intervals not exceeding one month, of the general body of the air, while the engine is running, at representative places and times laid down by the manager; and
- (b) at intervals not exceeding three months, of gas emitted from the exhaust of the engine, both when the engine is developing maximum power and when it is idling.
- (5) The percentage by volume of carbon monoxide or oxide of nitrogen present in each sample taken for the purposes of subsection (4) shall be determined and recorded in ink in a book provided by the manager. This book shall be available at all times for inspection by an inspector.
- (6) The operation of a diesel engine underground shall be discontinued until conditions have been remedied—

- (a) if the air at any place where it is being used is found to contain more than one hundred parts of carbon monoxide or five parts of oxides of nitrogen per million by volume; or
- (b) if the exhaust gases of the engine are found to contain more than two thousand parts of carbon monoxide or one thousand parts of oxide of nitrogen per million by volume; or
- (c) if the engine is found to have any defect which may cause danger to persons.
- (7) The engine of a diesel-powered unit underground shall not be kept running idle except while being tested or during brief halts while in use.
- (8) Where a diesel engine other than a mobile diesel engine is required to be used underground in a mine it shall only be used with the written permission of the Chief Government Mining Engineer and under such terms and conditions as the Chief Government Mining Engineer may stipulate.

Diesel fuel: delivery and storage underground

73. (1) Diesel engine fuel shall be delivered underground in such manner that no spillage can take place during delivery.
- (2) When diesel engine fuel is piped underground, the pipes shall be drained each time after use.
- (3) Diesel engine fuel shall be stored underground only in robust closed containers which do not leak.
- (4) Except with the written permission of an inspector, the quantity of diesel engine fuel stored underground shall not exceed the estimated consumption for three days.

Refuelling of diesel-powered units

74. (1) Every underground filling station where diesel-powered units are refuelled shall—
- (a) be adequately ventilated; and
- (b) be constructed of non-inflammable materials and have an impervious concrete floor which at all times shall be kept clean.

(2) Refuelling of diesel-powered mobile units underground shall be carried out at a properly established filling station complying with the provisions of subsection (1).

(3) Equipment for extinguishing fire shall be kept at every place where diesel engines are refuelled and every diesel mobile unit used underground shall be equipped with suitable and adequate means for extinguishing fires.

(4) No unauthorized person shall enter any filling station and no person shall smoke or use an open light in the vicinity of any filling station.

Servicing or repair of diesel-powered units underground

75. Every station used for servicing or repairing a diesel-powered unit underground shall be—

- (a) adequately ventilated and be of sufficient design to permit free movement of vehicles and persons; and
- (b) constructed of non-inflammable materials and have an impervious concrete floor; and
- (c) provided with safe and suitable facilities for inspecting the unit from below; and
- (d) provided with equipment for extinguishing fire; and
- (e) kept free from spillage and waste materials.

Ventilation of mines: plans to be kept

76. (1) At every mine in which more than twenty persons are at any one time employed underground, a tracing or print taken from an underground plan to a scale of 1:250, 1:500, 1:1 000 or, with the written permission of an inspector, from a plan drawn to a scale of 1:5 000 shall be kept and on it shall be shown the ventilating districts, the direction of air currents, the quantity of air circulating in each ventilating district and the position of each permanent fan, door, regulations, crossing, stopping, telephone and any explosives distribution stores.

(2) The tracing or print required by subsection (1) shall at all times be correct to within, at most three months from date, and, in the case of a coal mine or a fiery mine, a print shall be submitted to an inspector at intervals not exceeding three months.

(3) An inspector may grant written exemption from the provisions of this section in respect of any mine, to such extent and subject to such conditions as he may specify therein.

(4) Any applicant for exemption from the provisions of this section who is aggrieved by the decision of an inspector on his application may appeal to the Chief Government Mining Engineer, whose decision shall be final.

PART VI

MINE SURVEYING AND PLAN PREPARATION

Application of, and interpretation in, this Part

77. (1) The provisions of this Part shall apply to, and in respect of, all mines except—

- (a) any mine where the nature of the mineral deposit being mined is alluvial, eluvial, placer of rubble deposit, or dump; or
- (b) any mine where the depth of the workings, either vertical or on dip, does not exceed fifteen metres below the natural surface of the ground; or
- (c) any mine on which five or less persons are employed.

(2) In this Part—

“bench-mark” means a mark the height of which has been determined in the course of a level survey;

“datum-plane” means sea-level;

“plan” means any horizontal or vertical projection, including a tracing or transparency thereof;

“sheet”, in relation to a plan, means one of a number of plans which together form the whole plan;

“surveyor” means a mine surveyor or a competent person who has had adequate training and experience which would, in the opinion of the Chief Government Mining Engineer, enable him to perform the duties, and functions of this Part;

“survey point” means any point other than a survey station which can be plotted from survey observations of any kind, and which is easily recognizable;

"survey station" means any point which has been surveyed within the limits of error prescribed in section 81.

Surface, underground and assay plans to be kept

78. Every manager and owner of a mine shall cause the following plans of all workings of the mine to be prepared and kept at the mine—

- (a) a surface plan, which shall at all times be correct within at most one year from the date of its preparation or last revision, and which shall show—
 - (i) the position of any principal surface erection, including explosive magazines, reservoirs, dams, dumps, and other works of a similar nature and the position of any open-cast workings and boreholes, and any other surface object which an inspector may require to be shown; and
 - (ii) the position of any road, railway, river, power line and public telegraph lines; and
 - (iii) the boundaries of the claim area and the mining area in which work is being carried out:

Provided that, in the case of a claim the area of which is too expensive to show the boundaries on the same plan, the full area shall be shown on a smaller convenient scale plan, and such smaller scale plan shall show the boundaries of the sheets comprising the whole claim area; and

- (iv) the boundaries of any caved or subsided area or any cavity and the position of any fence erected to protect and prevent inadvertent access to such areas. The provisions of this subparagraph shall be carried out at six-monthly intervals; and
- (b) an underground plan, which shall at all times be correct within at most six months from the date of its preparation or last revision, and which shall show—
 - (i) any shaft, shaft station, stope, permanent explosives distribution store, cross-cut drive, winze, raise, major fault and dyke; and

- (ii) any abandoned workings which are adjacent to the mine workings, together with the degree of accuracy on which such plan is based; and
- (iii) the collar of every shaft or winze, which shall be indicated with the name, number and collar elevation of the shaft or winze with the inclination shown by an arrow and the dip in degrees; and
- (iv) every stoped area, which shall be indicated by hatching; and
- (v) the date, month and year of workings marked against the current position of the workings so that any change or advance can be easily ascertained with reasonable accuracy; and
- (c) an assay plan, which shall at all times be correct within at most six months from the date of its preparation or last revision and which shall—
 - (i) show the mine workings together with the value and width of the ore body at each sample section of development; and
 - (ii) be so drawn that any stope, drive, cross-cut and other detail shown thereon does not obscure the sample results in any way.

Plans details

79. The plans kept in terms of section 78 shall comply with the following provisions—

- (a) they shall be prepared by a surveyor; and
- (b) they shall be drawn to a scale of 1 : 250; 1 : 500; 1 : 1 000; 1 : 2 500; 1 : 5 000 or 1 : 10 000:

Provided that the Chief Government Mining Engineer may approve, in writing, any other scale, at his discretion; and

- (c) in all mine surveys, measurements shall be in metres; and
- (d) contour lines, covering the extent of all underground workings, shall be shown on the surface plan at regular intervals so that, with the aid of elevations in the

workings, the depth below surface at any point in the workings can be determined; and

- (e) where the average dip of the mine workings is more than sixty degrees, a vertical projection of such underground workings shall be kept; and
- (f) on every sheet or plan, the following details shall be shown—
 - (i) a subject heading, which shall consist of the name of the mine and the name of the sheet or plan; and
 - (ii) the survey system and the co-ordinates of the origin used; and
 - (iii) a north point; and
 - (iv) an accurately drawn scale; and
 - (v) an inset index to adjoining sheets of plans; and
 - (vi) co-ordinate lines in suitable colours in ink not more than two hundred millimetres apart with their values written in ink at both ends of the lines; and
 - (vii) a survey station shall be indicated by means of a small circle, together with its identification number, and the elevation of the survey station shall be shown prefixed by a plus or a minus sign, indicating the elevation above or below the datum plane; and
 - (g) tracings or transparencies of all plans shall—
 - (i) be made of durable material; and
 - (ii) be so prepared that the surface and underground tracings or transparencies are of the same scale and can be superimposed one upon the other;
 - (h) all plans, tracings and transparencies shall be brought up to date upon cessation of work or on the closing down or abandonment of the mine or part of the mine.

Survey procedure

80. In any survey carried out to provide information upon which the plans required by section 78 are to be based, the following procedures shall be adopted—

- (a) sufficient survey stations shall be established on the surface and underground so that all surface objects and all the workings can be surveyed; and
- (b) every survey station shall be marked with a number in such a manner that it can be easily distinguished, and this number shall be clearly recorded in the survey note book and calculation books and marked on the plan; and
- (c) a fixed permanent bench mark shall be established and shall be clearly marked; and
- (d) all survey notes and the dates on which each portion of the survey was made, together with the name of the surveyor, shall be recorded in the survey note book bearing the name of the mine, and the original observations with the accompanying remarks and sketches shall be entered clearly in the survey note book; and
- (e) all calculations and results deduced from original observations in respect of survey stations and points shall be entered legibly in a calculation book bearing the name of the mine; and
- (f) the numbers, in order, of all survey stations established together with the locality, co-ordinates, elevations and reference to the relevant calculation book of each station, shall be entered in tabular form in a peg-index register, bearing the name of the mine; and
- (g) the survey note books shall be cross-referenced in such a manner that reference from the survey notes to the calculation depending thereon and *vice versa* can be easily and readily made.

Limits of error

81. (1) The limits of allowable error in any mine survey shall be as follows—

- (a) the length of the line joining the positions of any survey station as determined by the beginning and closing

of a traverse shall not exceed nought comma one *per centum* of length of such traverse;

- (b) the error in length between any two survey stations of a traverse measured along the traverse shall not exceed nought comma one *per centum* of the true length;
 - (c) the error in level between any two survey stations shall not exceed nought comma five *per centum* of the true length between them;
 - (d) the error in direction of a line between any two consecutive survey stations of a traverse shall not exceed four minutes of arc with reference to the axes of co-ordinates;
 - (e) the error in special measurements which have for their object the fixing of the position of shafts to be sunk and the establishment of connexions shall not exceed fifty *per centum* of the limits given in paragraphs (a) to (d).
- (2) The error in representation on a plan of any point shall not exceed nought comma two *per centum* of the denominator of the scale of the plan in addition to the allowable error at the nearest survey station.

(3) Where the difficulties incidental to the accurate representation of any workings on a plan are such that the surveyor cannot accept responsibility for their accuracy within the limits Specified in this section, such workings shall be indicated on the plan by broken lines.

Signing of plans and responsibility for accuracy

82. (1) Every manager or owner of a mine shall ensure that all plans and tracings or transparencies thereof which he is required to prepare and keep in terms of this Part are signed and dated by himself and the surveyor when they are first prepared and on every occasion when they are brought up to date.

(2) A surveyor who prepares a plan or a tracing thereof shall be responsible for its accuracy.

Exemptions

83. (1) Notwithstanding any other provisions of this Part, if the Chief Government Mining Engineer—

(a) is satisfied that manager or owner of a mine is unable to prepare or cause to be prepared the plans required by this Part; and

(b) if the manager or owner so requests, in writing: he may cause such plans as he considers necessary to be prepared by a surveyor employed by the State, who shall thereafter be kept informed at not more than quarterly intervals by such manager or owner of all development work carried out at the mine.

(2) With the approval of the Chief Government Mining Engineer, an inspector may grant exemption, in writing, to the manager, or owner of a mine from complying with any of the provisions of sections 78 to 81 in respect of the preparation and keeping of any plan.

(3) Any exemption granted in terms of subsection (2)—

(a) shall be subject to such conditions as to the preparation and keeping of plans as may be determined by the Chief Government Mining Engineer; and

(b) notwithstanding the provisions of section 298, may be granted indefinitely or for such period as the Chief Government Mining Engineer thinks fit; and

(c) may be varied or revoked by the Chief Government Mining Engineer at any time.

(4) Every person to whom an exemption has been granted in terms of subsection (2) shall comply with any conditions determined by the Chief Government Mining Engineer in terms of subsection (3).

Unsatisfactory plans and failure to keep plans

84. (1) If the manager or owner of a mine, otherwise than in accordance with provisions of section 83—

(a) fails to prepare or keep any plan in accordance with the provisions of this Part; or

(b) prepares or keeps any plan which, in the opinion of the Chief Government Mining Engineer, is unsatisfactory;

the Chief Government Mining Engineer may, notwithstanding the institution of a prosecution in respect of such failure—

(i) direct that the manager or owner prepares plans in accordance with the provisions of this Part with- in such period as the Chief Government Mining Engineer may specify; and

(ii) if the manager or owner fails to comply with a direction made in terms of subparagraph (i), cause such plans to be prepared at the expense of the manager or owner.

(2) No person shall fail to comply with a directive made by the Chief Government Mining Engineer in terms of subparagraph (i) of subsection (1).

Plans to be confidential

85. All surface, underground and assay plans of any mine which have been prepared by any Government surveyor, and any such plans submitted to an inspector by any manager or owner of a mine for safe keeping, otherwise than in terms of section 86, shall be confidential, and no information relating to such plans shall be divulged to any member of the public, save with the written authority of such manager or owner:

Provided that, at the discretion of an inspector, information relating to such plans may be made available without such writ- ten authority if the mine has been abandoned and the claims have been forfeited in terms of Part XIII of the Act.

Notice of intention to close down or abandon a mine

86. (1) In addition to the requirements of subsection (1) of section 256 of the Act, if any owner or manager of a mine on which mining operations are being carried out intends to close down such mine, he shall, not less than thirty-one days before such closing down, give written notice to the inspector of the min- ing district in which such mine is situated of such intention.

(2) In addition to the requirements of subsection (2) of section 256 of the Act, the manager or owner of a mine shall, within thirty-one days of the closing down of the mine, lodge with the inspector of the mining district in which the mine is situated all plans, tracings, transparencies, survey co-ordinate ledgers, calculation books and, on the written instructions of such inspec- tor, survey note book, extant at the date of closure, and all such information shall thereupon become the property of Government.

PART VII
COAL MINES AND FIERY MINES
Interpretation in this Part

87. In this Part—

“accessible workings” includes all workings other than abandoned workings that have had all entrances effec- tively sealed by stoppings;

“incombustible matter” does not include moisture;

“road” includes any road of any description in the under- ground workings of a coal mine extending from the shafts, outlets or inlets to within ten metres of the coal face.

Declaration of a fiery mine

88. (1) The Chief Government Mining Engineer may declare any mine or part of a mine to be a fiery mine if inflammable gas is present or is, in his opinion, likely to be present in that mine.

(2) Where the Chief Government Mining Engineer has made a declaration in terms of subsection (1), he shall notify the manager of the mine concerned in writing of the declaration.

Coal mines: precautions against coal dust explosions

89. (1) Except in so far as exemption may have been granted by an inspector to such degree and subject to such conditions as he may specify in writing, the following provisions shall apply at every coal mine—

(a) no plant for sorting, screening or crushing coal shall be erected in the workings and no such plant shall be erected on surface within a distance of seventy-five metres from any downcast shaft or other opening where ventilating air enters the underground work- ings;

(b) arrangement shall be provided and used at every plant for sorting, screening or crushing coal to ensure that as little coal dust as practicable enters the workings;

(c) arrangements shall be provided and used in the under- ground workings to prevent, suppress, collect and re- move, as far as practicable, the fine coal and coal dust created by mining operations;