NORTHERN TERRITORY OF AUSTRALIA

MINE MANAGEMENT REGULATIONS

TABLE OF PROVISIONS

Regulation

PART 1 - PRELIMINARY

PART 2 - GENERAL

PART 3 - MEDICAL EXAMINATIONS AND RECORDS

PART 4 - OCCUPATIONAL HEALTH

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PART 17 - MISCELLANEOUS

NORTHERN TERRITORY OF AUSTRALIA

Regulations 1992, No. 73*

Regulations under the *Mine Management Act*

I, KEITH JOHN AUSTIN ASCHE, the Acting Administrator of the Northern Territory of Australia, acting with the advice of the Executive Council, hereby make the following Regulations under the *Mine Management Act*.

Dated 18 December 1992.

K.J.A. ASCHE
Acting Administrator

MINE MANAGEMENT REGULATIONS

PART 1 - PRELIMINARY

1. CITATION

These Regulations may be cited as the Mine Management Regulations.

2. INTERPRETATION

(1) In these Regulations, unless the contrary intention appears -

"airborne contaminant" means a substance which is not a normal constituent in air or is present at a level greater than that normally occurring in air;

"back" means the roof or upper part in an underground mining cavity;

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* Notified in the *Northern Territory Government Gazette* on 24 December 1992.

"batter of a face or profile of an open cut" means the angle that the face or side of an open cut makes with the horizontal overall;

"bench" means the horizontal step or floor along which ore, stone or overburden is worked or mined;

"berm" means a level surface or bench left or specially cut in the side of an open cut for the purpose of trapping falling material;

"bin" means a structure used to hold loose material;

"brace" means a platform area around a shaft on the surface at a mine;

"bridle" means a device which attaches to a winding rope and supports and guides a conveyance within a shaft;

"cap lamp" means a light fitted to a safety helmet;

"Chief Medical Officer" has the same meaning as in the *Public Health Act*;

"conveyance" means the equipment on a winding engine which conveys persons or material;

"decline" means a downward sloping entrance or a downward sloping area of less than 15° slope;

"dredge" includes a barge, pontoon or other structure used to carry on mining operations by means of dredging, pumping, sluicing or other similar method;

"drum winding engine" means a winding engine in which the winding rope is driven by the winding rope being wound or unwound on a drum;

"electrician" means a person who holds an electrical worker's licence, endorsed with the trade classification electrical mechanic and a grading A, issued under the *Electrical Workers and Contractors Act*;

"emergency procedure" means a procedure to deal with a recognised dangerous situation;

"face" means an area of excavation which has been worked;

"first aid facilities" includes first aid kits, special first aid equipment, safety showers and eyewashes;

"friction winding engine" means a winding engine in which the winding rope is driven by friction;

"hazard" means an agent which has the potential to injure or compromise the health or safety of a person;

"hazardous substance" means a substance which has the potential to harm the health or safety of a person;

"kibble" means a large bucket used in shaft operations;

"load haul dump" means a diesel engined powered, hydraulically operated, earth moving machine;

"knocker line" means a line or cable hung in a shaft, rise, winze or pass that is attached to a sounding device or bell at one end and is used to transmit signals;

"material safety data sheet" means a document set out in accordance with the National Occupational Health and Safety Commission's publication entitled "Guidance Note for the Completion of a Material Safety Data Sheet" published by the Australian Government Publishing Service;

"medical examination" means an examination carried out by a medical practitioner;

"mobile equipment" means equipment used to excavate, load or transport material that moves on wheels, tracks or skids, but does not include a mobile machine;

"mobile machine" means an electrically operated machine capable of being moved about while in use, but does not include an overhead crane or a locomotive used for haulage purposes;

"monkey" is a non load bearing device which guides a conveyance in a shaft;

"open cut" mean a surface excavation;

"operator" means a person who is trained to operate machinery;

"ore pass" means an underground opening through which broken material is transferred, by gravity, from a higher level to a lower level;

"personal protective equipment" means equipment which is designed to protect a person from, or reduce a person's exposure to, a hazard;

"plat" means a platform area around a shaft;

"portable machine" means an electrically operated machine capable of being held by hand while in use;

"qualified person" means a person trained in a specific discipline and possessing qualifications approved by an inspector;

"raise" or "rise" means a development excavated upwards from a level drive or crosscut;

"shaft" means an opening into a mine having an inclination to the horizontal of 15° or more through which persons or materials are raised or lowered, or which is used as a main intake or outlet for ventilation;

"shift" means a fixed normal working period;

"skip" means a container which is used to transfer material from one level to another;

"stope" means an excavation, other than development workings, made for the purpose of excavating ore;

"surge stockpile" means a stockpile of ore installed at the input end of a processing or treatment plant to provide uniform feeding of material to the plant;

"touch voltage limitation" means the voltage at which the exposed frame or container of an apparatus, normally at earth potential, may be raised above earth potential during fault conditions without presenting a hazard;

"transportable machine" means an electrically operated machine that is, from the nature of its use, required to be moved, from time to time, between periods when it is in operation, without being dismantled;

"underground" means having an overlying cover of rock;

"winding engine driver" means the person operating or in charge of a winding engine;

"winding engine log book" means the winding engine log book kept under section 29 of the Act in respect of a winding engine;

"winze" means a vertical or inclined opening or excavation connecting 2 underground levels;

"working face" means the area of excavation which is being worked.

(2) In these Regulations, a reference to the abbreviation "AS" followed by a group of numerals or letters, or numerals and letters, is a reference to the Australian Standard, indicated by that group, published by the Standards Association of Australia.

(3) In these Regulations, unless the contrary intention appears, a technical term not otherwise defined has the meaning ordinarily described to it in the technical field in relation to which the term is used.

(4) Where a document, standard, rule or specification adopted by these Regulations refers to another document, standard, rule or specification or any part thereof, then such document, standard, rule or specification or part thereof, shall be deemed to be adopted by these Regulations to the extent necessary to give full force and effect to the first-mentioned document, standard, rule or specification.

(5) Where a document, standard, rule, or specification adopted by these Regulations refers to "the statutory authority" or "the regulatory authority", the reference shall be construed as a reference to the Chief Government Mining Engineer.

(6) Where a document, standard, rule or specification adopted by these Regulations is inconsistent with these Regulations, the Regulations shall prevail and the document, standard, rule or specification is, to the extent of the inconsistency, invalid.

(7) Where a document, standard, rule or specification adopted by these Regulations is inconsistent with another document, standard, rule or specification also adopted by these Regulations, the document, standard, rule or specification that prevails shall be determined by the Chief Government Mining Engineer.

(8) Where the design of a mine or a part of a mine is required to comply with a document, standard, rule or specification at the time of its design, the document, standard, rule or specification shall continue to apply to the mine or the part of the mine, without amendment, until alteration, repair or relocation, at which time, the Chief Government Mining Engineer may direct that the mine or the part of the mine be modified to comply with the document, standard, rule or specification as applying at that time.

3. MANAGER TO COMPLY WITH REGULATIONS

The manager of a mine shall ensure that all activities at the mine are carried out in accordance with these Regulations and, where an obligation is imposed by a regulation, the manager shall, unless the contrary intention appears, comply with and not contravene the regulation.

PART 2 - GENERAL

4. STANDARDS APPLYING AT MINES

(1) The Australian Standards specified in Schedule 1 apply to and in relation to a mine and shall be complied with in conjunction with, or as part of, an obligation imposed by these Regulations.

(2) The Australian Standards specified in Schedule 2 shall be taken into account when complying with an obligation imposed by these Regulations.

5. ENVIRONMENTAL REPORTING

At approved intervals, the manager of a mine shall submit to the Chief Government Mining Engineer, for approval, plans and reports on rehabilitation, water management and monitoring programs at the mine.

6. CONSTRUCTION WORK

The construction of any plant, structure or building at a mine shall not be commenced unless it is approved.

7. TRAINING TO BE PROVIDED

(1) Induction and ongoing training relating to a person's employment at a mine shall be provided to a person employed at a mine.

(2) A person who works underground at a mine shall be given training and drilling in emergency procedures to ensure that the person understands and is capable of implementing the procedures.

(3) Details of training provided under this regulation shall be recorded and shall form part of a person's employment record at a mine.

8. LIQUOR AND DRUGS

(1) Subject to this regulation, a person shall not -

(a) attend work at a mine if the person is under the influence of intoxicating liquor or a drug; or

(b) be in possession of intoxicating liquor or a drug at a mine.

Penalty: $5,000.

(2) Subject to this regulation, the manager of a mine shall not permit a person to commence work at the mine, or remain at work, if, in the opinion of the manager, the person is affected by intoxicating liquor or a drug.

Penalty: $5,000.

(3) This regulation does not apply to -

(a) the possession by a person of a drug prescribed by a medical practitioner for use by the person; or

(b) the possession of intoxicating liquor with the authority of the manager.

9. ACCIDENT STAND-BY VEHICLE

(1) A vehicle shall be maintained on stand-by at a mine for transporting persons injured at the mine to a place for medical treatment.

(2) A person authorised to give first aid or medical treatment at a mine shall be notified of the vehicle referred to in subregulation (1) and shall have effective control of the vehicle while the person is on duty at the mine.

10. EMERGENCY RESCUE PROCEDURES

Emergency rescue procedures shall be prepared for a mine, commensurate with -

(a) the scale and complexity of the operation;

(b) the nature and extent of potential hazards; and

(c) the degree of risk pertaining,

at the mine.

PART 3 - MEDICAL EXAMINATIONS AND RECORDS

11. PERSONAL RECORDS TO BE KEPT

(1) A record of each person who works at a mine shall be kept containing -

(a) the date of birth of the person,

(b) the date when the person commenced work at the mine;

(c) the date when the person commenced work underground at the mine, if applicable;

(d) the date on which the person ceased work at the mine; and

(e) the date and results of all medical examinations undergone by the person as part of the person's employment at the mine or on ceasing to work at the mine.

12. INSPECTION OF MEDICAL CERTIFICATES

Where the manager of a mine has been provided with a medical certificate relating to a person who is or was employed at the mine, the manager shall, on request, make the certificate available to an inspector or the Chief Medical Officer.

13. MEDICAL EXAMINATIONS

(1) A person who may be exposed to a health risk at a mine may be directed to undergo such medical examinations, at such times, as the Chief Government Mining Engineer may specify.

(2) A person directed under subregulation (1) shall be medically examined as and when specified.

14. SILICOSIS AND TUBERCULOSIS

(1) The Chief Government Mining Engineer may, by notice in writing served on the manager of a mine, declare the mine or a part of the mine to be an area of silicosis risk for the purposes of the *Silicosis and Tuberculosis (Mine-Workers and Prospectors) Act*.

(2) A manager notified under subregulation (1) shall enter the notice in the mine record book and cause a copy of the notice to be displayed at the mine.

(3) The Chief Government Mining Engineer shall send a copy of a notice referred to in subregulation (1) to the Chief Medical Officer as soon as practicable after the notice is served on the manager.

PART 4 - OCCUPATIONAL HEALTH

15. AIRBORNE CONTAMINANTS

A person at a mine shall not be exposed to airborne contaminants exceeding those set out in the Worksafe document, NOHSC:1003 and 3008, entitled "Exposure Standards for Atmospheric Contaminants in the Occupational Environment".

16. NOISE

(1) A person shall not be exposed at a mine to noise exceeding -

(a) an 8 hour equivalent continuous A-weighted sound pressure level, $L_{Aeq,8h}$, of 85 dB(A); or

(b) a peak sound pressure level, L_{peak}, of 140 dB(lin).

(2) Exposure to noise is taken to be that measured at a person's ear position without taking into account protection that may be afforded by hearing protection equipment.

(3) A hearing protection program shall be provided to a person at a mine if the person may be exposed to noise exceeding that specified in subregulation (1).

17. LIGHTING

(1) An area at a mine where a person is required to work or pass through shall have a sufficient level of lighting for the person to perform the work or to permit the person to pass through the area without the health or safety of the person being at risk.

(2) Where emergency lighting is installed at the mine it shall be maintained.

18. EXPOSURE TO CERTAIN RISKS

Where a person at a mine is exposed to -

(a) heat or cold;

(b) whole body vibration; or

(c) biological hazards,

such that there is a risk to the health or safety of the person, measures shall be taken to protect the health and safety of the person.

19. RADIATION PROTECTION

(1) In this regulation, "Code" means the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (1987), referred to as the Radiation Protection (Mining and Milling) Code (1987), as amended from time to time, made under section 9(1) of the *Environment Protection (Nuclear Codes) Act 1978* of the Commonwealth.

(2) The Code applies to and in relation to all mines.

(3) The expression "appropriate authority" in the Code means, in respect of the clause of the Code specified in column 1 of Schedule 3, the person or persons specified opposite in column 2 of the Schedule.

(4) The power of the Chief Government Mining Engineer under clause 9(14) or (26) of the Code shall not be exercised without prior consultation with the Chief Medical Officer.

20. MATERIAL SAFETY DATA SHEETS AND REGISTERS

(1) Where a hazardous substance is used at a mine -

(a) the current material safety data sheet of the substance shall be displayed at the mine;

(b) a material safety data sheet shall be obtained from the manufacturer, importer or supplier before or on the first supply of a hazardous substance to the mine;

(c) a register of hazardous substances used at the mine shall be kept and maintained; and

(d) a container in which a hazardous substance is stored shall be labelled to warn of the presence of the substance in the container.

(2) A register kept under subregulation 1(c) shall contain -

(a) the current material safety data sheet for; and

(b) any other information relating to the safe use, handling or storage of,

hazardous substances used at the mine.

(3) A register kept under subregulation (1) shall be made available, on request, to a person working at the mine.

(4) A person shall not alter a material safety data sheet of a hazardous substance at a mine.

21. LABELS

(1) A container in which a hazardous substance is stored shall have affixed to it a label containing the following information:

(a) identification of the substance, including the substance name and trade name;

(b) ingredients and formulation details, where applicable;

(c) risks associated with the substance;

(d) directions for safe use, storage and handling, where applicable;

(e) emergency procedures;

(f) details of the manufacturer or supplier of the substance.

(2) Where a hazardous substance at a mine is contained in a system, such as a pipe or piping system, process vessel or reactor vessel, the system shall be identified to warn a person of the presence of the substance in the system.

(3) A container or system shall remain labelled or identified as required by this regulation until cleaned and free of the hazardous substance.

(4) Except as permitted by this regulation, a label referred to in this regulation shall not be removed, defaced, modified or altered.

(5) A container or system used to contain a hazardous substance which is no longer intended for that use shall be cleaned or disposed of in an appropriate manner.

22. PERSONAL PROTECTIVE EQUIPMENT

(1) Personal protective equipment shall be provided to a person at a mine where exposure to a hazard may compromise the health or safety of the person and where other means of controlling the exposure are not practicable.

(2) Personal protective equipment provided under subregulation (1) shall, when used correctly, provide protection to the person wearing it so that the health or safety of the person is not compromised because of the hazard.

23. USE AND MAINTENANCE OF PERSONAL PROTECTIVE EQUIPMENT

Where personal protective equipment is provided at a mine -

(a) instruction in the correct fitting, use and maintenance of the equipment shall be provided;

(b) information on the limitations of the use of the equipment shall be provided; and

(c) the equipment shall be maintained in good working order.

24. REPLACEMENT OF PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment, or a part thereof, shall be replaced when it -

(a) no longer provides the level of protection required by regulation 22;

(b) has exceeded its working life as specified by the manufacturer; or

(c) is damaged.

25. DUTIES OF PERSONS USING PERSONAL PROTECTIVE EQUIPMENT

(1) A person provided with personal protective equipment under regulation 22 shall -

(a) wear the equipment at all times and in all areas as required by the manager; and

(b) not wilfully damage or misuse the equipment.

(2) Where personal protective equipment provided to a person under regulation 22 is damaged or has a defect, the person shall, immediately on becoming aware of the damage or defect, report it to the manager of the mine.

26. AREAS TO BE SIGNPOSTED

An area at a mine where personal protective equipment is required to be worn shall be clearly identified.

27. HEAD PROTECTION

Where a person at a mine is exposed to a hazard which may pose a risk of head injury, suitable head protection shall be provided to the person to protect the person from the risk.

28. EYE PROTECTION

Where a person at a mine is exposed to a hazard which may pose a risk of eye injury, suitable eye protection shall be provided to the person to protect the person from the risk.

29. RESPIRATORY PROTECTION

(1) Where a person at a mine may be exposed to -

(a) a concentration of airborne contaminants which may pose a risk to the health or safety of the person; or

(b) an atmosphere containing less than 20% oxygen,

the person shall be provided with respiratory protective equipment.

30. DUST SUPPRESSION

Dust at a mine shall be kept to a minimum and, in any event, shall not exceed the levels set out in the Worksafe document, NOHSC:1003 and 3008, entitled "Exposure Standard for Atmospheric Contaminants in the Occupational Environment."

31. HAND PROTECTION

Where a person at a mine may be exposed to a hazard which may pose a risk of hand injury, suitable hand protection shall be provided to the person to protect the person from the risk.

32. FOOT PROTECTION

Where a person at a mine is exposed to a hazard which may pose a risk of foot injury, the person shall wear foot protection that will protect the person from the risk.

33. PROTECTIVE CLOTHING

Where a person at a mine is exposed to a hazard which may pose a risk to the health or safety of the person if the hazard comes in contact with the person's skin, the person shall wear protective clothing that will protect the person from the risk.

34. SAFETY BELTS AND ROPES

A safety belt and rope shall be provided for use by a person working -

(a) underground at a mine;

(b) at a precipitous place or on a loose rock slope at a mine;

(c) at a chute, pass or bin at a mine; and

(d) at a place at a mine where there is a risk that the person may fall from a height.

35. FLOTATION DEVICES

A flotation device shall be provided to a person at a mine where there is a risk that the person may be injured or drown if the person were to fall into water situated at or adjacent to the mine.

PART 5 - FIRE

36. FIRE FIGHTING APPARATUS

(1) Fire fighting apparatus shall be provided at a mine and shall be maintained at all times.

(2) An inspector may direct that fire precautions be taken in such areas at a mine as are specified by the inspector.

(3) An inspector may direct that fire prevention measures be undertaken at a mine in consultation with the Regional Bushfires Committee, if any, established under the *Bushfires Act* for the region in which the mine is situated.

37. FIRE FIGHTING TRAINING

(1) A person employed at a mine shall be trained in the procedures to be followed in the event of a fire at the mine.

(2) Training under subregulation (1) shall include -

(a) emergency fire procedures;

(b) the factors necessary for combustion;

(c) the classification of fires;

(d) the causes of fire and fire prevention measures;

(e) identification, use and methods of operation of portable fire equipment;

(f) fire exit drill; and

(g) training in first aid to be provided to fire or smoke inhalation victims.

PART 6 - EXPLOSIVES

38. EXPLOSIVES LOG BOOK

(1) A book, to be known as an explosives log book, shall be provided for each explosives magazine at a mine.

(2) A person appointed under regulation 39 to be in charge of an explosives magazine shall keep in the explosive log book provided for the magazine under subregulation (1) an accurate record of all incoming, outgoing and current stocks of explosives.

39. PERSON IN CHARGE OF EXPLOSIVES MAGAZINES

(1) The manager of a mine shall appoint such persons as the manager thinks fit to be in charge of an explosives magazine at the mine and shall enter the appointments in the mine record book.

(2) A person appointed under subregulation (1) shall, while the person is on duty at the mine, have and retain in his or her possession or control the key to the explosives magazine for which the person is in charge.

(3) A person, other than a person appointed under subregulation (1), shall not have or retain in his or her possession a key to an explosives magazine at a mine.

40. EXPLOSIVES MAGAZINES

The location of an explosives magazine at a mine shall be approved by an inspector.

41. BULK EXPLOSIVES FACILITIES

Bulk explosives storage, manufacturing and transporting facilities at a mine shall be approved by an inspector.

42. MISFIRES

(1) Where explosives in a hole at a mine misfire -

(a) a barricade or other obstruction shall be placed around the hole; and

(b) a sign, warning of the misfire, shall be placed on the barricade or obstruction,

if the hole is left unattended while the explosives remain in the hole.

(2) The manager of a mine shall, as soon as practicable after a misfire of more than 500 kilograms of explosives occurs at the mine -

(a) notify an inspector; and

(b) enter details of the misfire in the mine record book.

43. PRECAUTIONS AGAINST STORMS ON SURFACE MINES

When an electrical or dust storm is imminent at a mine -

(a) blasting preparations shall be suspended and all persons in or near a blast area shall be withdrawn to a safe distance from the blast area; and

(b) all persons in or near an area where explosives are stored or manufactured shall be withdrawn to a safe distance from where the explosives are stored or manufactured,

until the storm activity passes.

44. BLASTING IN RESIDENTIAL OR ENVIRONMENTALLY SENSITIVE AREAS

Blasting in or near a residential area or such other area as may be specified by an inspector shall be conducted in a manner so that the disturbance to residents in the area or to the ecosystem of an environmentally sensitive area is kept to a minimum.

45. BLAST MONITORING

(1) Blast monitoring equipment shall be installed at a mine when directed by an inspector.

(2) Results from equipment installed under subregulation (1) shall be submitted to an inspector as required by the inspector.

(3) Air blast overpressure limits at a mine shall not exceed 125 decibels.

46. DRILL SAFETY

Drilling shall not commence at a face underground at a mine unless the face and back have been barred and washed down and found to be safe.

47. APPROVAL OF UNUSUAL BLASTING METHODS

(1) Unless approved by an inspector -

(a) a new blasting method;

(b) an unusual application of explosives or equipment used with explosives; or

(c) a new blast design,

shall not be used at a mine.

(2) Unless approved by an inspector, blasting in a shaft sinking operation at a mine shall be initiated only from the surface at the mine.

48. OLD OR DETERIORATED EXPLOSIVES

Old or deteriorated explosives at a mine shall be destroyed in accordance with the recommendations of the manufacturer of the explosives.

49. RECORDING OF INCIDENTS

An unusual incident or irregular occurrence in relation to -

(a) the testing, use, transport or storage of explosives; or

(b) the equipment or facilities used to manufacture explosives,

at a mine shall be recorded in the mine record book.

50. REPORTING THEFT OR LOSS OF EXPLOSIVES

A theft or loss of explosives, or an unaccountable stock shortage of explosives, at a mine shall be reported immediately to an inspector and a member of the Police Force.

PART 7 - ELECTRICITY

51. NOTICE OF NEW WORK

(1) This regulation does not apply to or in relation to the installation of telephonic or signalling apparatus at a mine.

(2) Before constructing an electrical installation or carrying out a major alteration of an electrical installation at a mine, the manager shall notify the Chief Government Mining Engineer and submit such information to the Chief Government Mining Engineer as may be required by the Chief Government Mining Engineer.

(3) The manager of a mine shall notify the Chief Government Mining Engineer before a major electrical installation at the mine is energised or re-energised.

52. SUBSTATIONS AND DISTRIBUTION CENTRES

(1) A substation or distribution centre at a mine shall be accessed only by persons authorised by the manager of the mine.

(2) A substation or distribution centre at a mine shall -

(a) be kept dry and free from debris;

(b) not be used for storage;

(c) be provided with fixed lighting;

(d) be provided with fire protection and maintenance equipment;

(e) if situated underground, be provided with permanent telephones or other means of communication to the surface; and

(f) be provided with durable non hygroscopic notices containing directions as to -

(i) the resuscitation of persons suffering from an electric shock;

(ii) the procedure to be followed in case of a fire; and

(iii) the persons who are permitted to have access to and use the apparatus in the substation or distribution centre.

53. ELECTRICAL DIAGRAM TO BE KEPT

(1) A diagram showing the position, size and purpose of all fixed apparatus and cables at a mine, including signalling and telephonic apparatus, shall be kept at the mine.

(2) The diagram referred to in subregulation (1) shall be -

(a) brought up to date not less than once each 6 months; and

(b) produced by the manager of the mine to an inspector on being requested to do so by the inspector.

54. POWER SUPPLY TO MINE

(1) The power supply on the surface at a mine shall be protected against -

(a) short circuit and overload; and

(b) leakage of current to earth.

(2) The power supply underground at a mine shall be protected on the surface against -

(a) short circuit and overload; and

(b) leakage of current to earth.

(3) Earthing electrodes associated with the earthing system at a mine shall be on the surface at the mine.

55. REMOTE MOTORS

A motor at a mine that is operated remotely or in such a way that it cannot be seen from its switch or control gear shall -

(a) have facilities for locking it in an isolated position; and

(b) be wired so that the motor cannot be started until released from the position where it was isolated.

56. PORTABLE, TRANSPORTABLE AND MOBILE MACHINE PROTECTION

(1) A mobile machine or transportable machine and associated trailing cables at a mine operating at a voltage exceeding extra-low voltage shall be protected by -

(a) an approved automatic earth leakage current protection device; and

(b) an approved automatic earth continuity monitoring device, capable of cutting off the power supply in the event of a break in the earth conductor of the cable between the supply or control box and the machine.

(2) Subject to subregulation (3), an automatic earth leakage current protection device referred to in subregulation (1)(a) shall be set to operate at a leakage current not exceeding, on circuits where voltage -

(a) does not exceed low voltage - one ampere; or

(b) exceeds low voltage - 2 amperes.

(3) A portable machine or apparatus, and associated cable, at a mine operating at a voltage exceeding extra-low voltage shall be protected by an earth leakage current protection device of the instantaneous type set to operate at a value not exceeding 30 milliamperes.

(4) An inspector may direct that a portable machine or apparatus, and associated trailing cables, at a mine be protected by an automatic earth continuity monitoring device capable of cutting off the power supply in the event of a break in the earth conductor of the cable between the power supply or the control box and the machine.

57. EARTHING IN TRAILING CABLES

A trailing cable used on a mobile or transportable machine at a mine shall be provided with an earthing conductor and pilot conductor.

58. TRAILING CABLES TO BE IDENTIFIED

A trailing cable at a mine shall have a distinguishing number or name clearly indicated -

(a) on a label securely attached to the cable; and

(b) on a label or by other means near a connecting plug of the cable.

59. HIGH VOLTAGE MOBILE AND TRANSPORTABLE MACHINES

(1) In this regulation, "machine" means a high voltage mobile machine or a high voltage transportable machine.

(2) High voltage switch gear and control gear of a machine at a mine shall -

(a) be located away from the machine it serves;

(b) be operated by remote control at the machine;

(c) have a load-breaking and load-making isolator interlocked with its cubicle door; and

(d) have facilities for earthing the outgoing cables from the control cubicle.

(3) Facilities referred to in subregulation (2)(d) shall be -

(a) interlocked with the main isolator; and

(b) capable of being locked in the earthing position.

(4) An inspection cover or handhold cover of a control cubicle in a machine shall be interlocked with the incoming power supply in such a way that the power supply to the control cubicle is automatically isolated if the inspection cover or handhold cover is no longer in position.

(5) Relays provided for the protection of a machine at a mine shall be of a hand-resetting type and the hand-resetting facilities shall be located outside the control cubicle.

(6) A remote control circuit of a machine at a mine shall be designed so that, if it fails, there are alternative means to stop the machine until the fault in the remote control circuit is rectified.

60. TOUCH VOLTAGE LIMITATION

(1) A mobile machine or transportable machine at a mine shall be fitted with a touch voltage limitation system.

(2) Earthing resistors associated with a touch voltage limitation system referred to in subregulation (1) shall have a continuous time rating.

(3) A relay associated with a touch voltage limitation system referred to in subregulation (1) shall limit the touch voltage and operating time to that shown by the table and graph lines in AS 3007.2.

Penalty: $5,000.

61. WORK ON HIGH VOLTAGE APPARATUS

Where work is required to be carried out on high-voltage apparatus at a mine, the person who is to perform the work shall, before commencing the work -

(a) sign on an access permit;

(b) effectively isolate the apparatus from the power supply;

(c) test the apparatus to ensure that it is not live; and

(d) earth the apparatus.

62. ROUTINE TESTS

An electrician at a mine shall carry out and record -

(a) as often as directed by the manager -

(i) an examination of apparatus at the mine, including earthing conductors;

(ii) an examination of insulation of power circuits at the mine, including machines, cables and apparatus forming part of or connected to those circuits;

(iii) a test of the electrical continuity and effectiveness of the earthing system; and

(iv) a test of the insulation resistance and continuity of conductors of every trailing cable at the mine; and

(b) not less than -

(i) once every 3 months or at such other periods as directed by an inspector, a test of the effectiveness of earth leakage equipment at the mine; and

(ii) once each week, an examination to detect abrasions and other defects of every trailing cable at the mine.

PART 8 - MACHINERY

Division 1 - Boilers and Unfired Pressure Vessels

63. BOILERS AND UNFIRED PRESSURE VESSELS TO BE INSPECTED

A boiler or unfired pressure vessel at a mine shall be inspected by a qualified person at intervals determined by the Chief Government Mining Engineer.

64. CERTIFICATE OF INSPECTION

(1) Where a qualified person who carries out an inspection of a boiler or unfired pressure vessel under regulation 63 is satisfied that the boiler or vessel is in good condition and may be safely used for the purpose for which it is intended, the qualified person shall issue a certificate to that effect to the manager of the mine.

(2) A certificate issued under subregulation (1) shall be exhibited in a conspicuous place at the mine.

(3) A boiler or unfired pressure vessel shall not be used at a mine unless a certificate issued under subregulation (1) is in force in respect of the boiler or unfired pressure vessel.

Penalty: $5,000.

Division 2 - Cranes and Hoists

65. CRANES AND HOISTS TO BE INSPECTED

A crane or hoist at a mine shall be inspected by a qualified person at intervals determined by the Chief Government Mining Engineer.

66. CERTIFICATE OF INSPECTION

(1) Where a qualified person who carries out an inspection of a crane or hoist under regulation 65 is satisfied that the crane or hoist is in good condition and may be safely used for the purpose for which it is intended, the qualified person shall issue a certificate to that effect to the manager of the mine.

(2) A certificate issued under subregulation (1) shall be made available for inspection by an inspector on request.

(3) A crane or hoist shall not be used at a mine unless a certificate issued under subregulation (1) is in force in respect of the crane or hoist.

Penalty: $5,000.

67. MULTI CRANE HOISTING

Where more than one crane is used to lift a load at a mine, the safe working load for each crane shall be reduced, where the number of cranes used is -

(a) 2 - by 20%;

(b) 3 - by 33%; or

(c) 4 or more - by 50%.

68. COMMUNICATION BETWEEN CRANE OPERATORS

Where there is the possibility that 2 cranes at a mine or their loads may collide, the persons operating the cranes shall be provided with effective means of communication with each other.

69. RIDING IN CAGE

A person shall not be lifted in a cage suspended from a crane at a mine unless -

(a) the lift is under the direction of a qualified person;

(b) the crane is equipped with drive-up and drive-down controls on both the hoisting and luffing motions;

(c) the cage is attached to the crane rope by a safety hook or shackle;

(d) the cage has been manufactured to an approved design;

(e) if the cage is operated out of sight of the person operating the crane, effective means of communication is provided between the person operating the crane and the person referred to in paragraph (a); and

(f) a written record of the lift is made.

70. OVERHEAD WARNING DEVICES

A crane at a mine shall be fitted with an overhead warning device to be used when -

(a) handling loads over the head of a person; or

(b) travelling over an area where a person may cross.

71. PERSONS LIFTED BY FORKLIFT TRUCK

A person shall not be lifted by a forklift truck at a mine unless the person is lifted on a platform fitted to the forks of the truck.

72. OPERATING NEAR OVERHEAD POWER LINES

A crane or hoist shall not be used at a mine where a rope or a part of the structure of the crane or hoist is less than 3 metres from an energised overhead power line.

Division 3 - Lifts

73. CARRIAGE OF PERSONS IN LIFTS

Unless approved by an inspector, a lift at a mine shall not be used to carry persons.

74. LIFT REPAIRS

(1) Repairs to a lift at a mine shall not be carried out unless -

(a) the repairs are carried out by a qualified person; and

(b) the person makes a written record of the repairs carried out.

(2) A record referred to in subregulation (1)(b) shall be kept in the motor room of the lift.

Division 4 - Machinery Safety

75. MACHINERY GUARDS

Where the health or safety of a person at a mine may be at risk because of the operation of a machine or a part of a machine at the mine, the machine or part shall be fitted with a guard or barrier to protect the person from the risk.

PART 9 - MOBILE EQUIPMENT

76. MOBILE EQUIPMENT

(1) A record of a modification or alteration to a safety related component of mobile equipment used at a mine, other than a manufacturer's modification, shall be made in the mine record book and an inspector shall be notified, as soon as practicable, after the modification or alteration is made.

(2) Mobile equipment at a mine shall be fitted with -

(a) a mechanical emergency engine stop that is capable of being operated at ground level;

(b) an audible warning device;

(c) lights and an audible warning device that operate automatically when the machine is being reversed;

(d) mirrors for reversing;

(e) fire extinguishers;

(f) if used underground at a mine, an integrated fire extinguishing systems; and

(g) spark arresters and silencers on the exhaust systems.

77. INSPECTION OF MOBILE EQUIPMENT

Inspection procedures for mobile equipment at a mine shall be established and implemented to ensure that the equipment, when used, is safe and fit for its intended use.

78. OPERATION OF MOBILE EQUIPMENT

(1) Mobile equipment at a mine has right of way over other vehicles at the mine.

(2) Where an operator is in attendance at a crusher at a mine, the operator of mobile equipment dumping into the feed hopper of the crusher shall not dump the load from the equipment until the "safe to tip" signal is given by the operator of the crusher.

(3) Mobile equipment at a mine shall not be driven at a speed greater than that specified by -

(a) a sign erected at the mine; or

(b) the manager of the mine.

79. TRAILERS

Where a trailer being towed by a vehicle (including mobile equipment) at a mine has a gross mass greater than the gross mass of the vehicle, the trailer shall be fitted with a braking system -

(a) capable of being operated from the normal driving position of the vehicle; and

(b) which will effect an immediate application of the brakes of the trailer in the event of the trailer becoming detached from the vehicle and secure the trailer in a stationary position.

PART 10 - SAFETY IN OPEN CUTS

80. DUMPING OPERATIONS

(1) The surface of a dump at a mine shall rise to the dumping face.

(2) Water shall not be permitted to accumulate at the bottom of the dumping face of a dump.

(3) A person operating a dumping vehicle on a dump shall dump the load from the vehicle -

(a) at a windrow on the dump; or

(b) where a windrow is not provided, not closer than one vehicle length from the edge of the dump.

(4) A windrow referred to in subregulation (3)(a) shall be of axle height of the largest dumping vehicle at the mine.

81. SURGE STOCKPILES OR BINS

A person shall not walk or climb on a surge stockpile or bin at a mine unless -

(a) the person has been instructed to do so by the manager;

(b) the feed to and from the stockpile or bin has stopped and the feed mechanism is isolated and a safety tag has been affixed to it;

(c) the manager or a person authorised by the manager has established that the exit point below the stockpile or bin is not blocked or hung up;

(d) the person is wearing a safety belt securely fixed to an anchorage located above the person; and

(e) the person is assisted by another person stationed at a safe vantage point away from the stockpile or bin.

82. EQUIPMENT ON SURGE STOCKPILES

(1) Unless approved by an inspector, earthmoving equipment shall not be used on a surge stockpile at a mine.

(2) The operator of earthmoving equipment used on a surge stockpile at a mine shall not leave the equipment while it is on the surge stockpile.

83. STOPING TO BE CLEAR FROM OPEN CUTS

Where work is being carried out in an open cut at a mine, unless approved by an inspector, no stoping shall be carried out underground within 30 metres, vertically or horizontally, from a wall or floor of the open cut.

84. FACES OF OPEN CUTS

(1) The bench of an open cut shall -

(a) unless approved by an inspector, not be more than 20 metres high;

(b) not be worked in a manner that results in the face overhanging; and

(c) be kept free of loose material.

(2) The bench of an open cut above the working area shall be provided with catch berms not less than 5 metres in width.

(3) Unless approved by an inspector, the working face of an open cut shall be not more than 10 metres high.

(4) In designing the batter of a face or profile of an open cut consideration shall be given to the existing surrounding conditions at the mine.

(5) A design referred to in subregulation (4) shall be submitted to an inspector for approval.

85. SAND PITS

Where sand is excavated at a mine that is within or adjacent to a residential area -

(a) the mine shall be fenced to prevent access being gained by persons who are not authorised by the manager;

(b) the height of a working face from which the sand is being excavated shall not exceed the vertical reach of the excavating equipment working at the face; and

(c) at the end of each shift after sand is excavated, the working face is battered down to prevent a slump of the sand at the face.

86. STANDARDS OF HAULAGE ROAD

Unless approved by an inspector, a road used to transport ore, rock or other products or material at a mine shall be -

(a) signposted;

(b) defined by posts, not less than 1.5 metres high and not more than 100 metres apart, to which reflective material is attached;

(c) sealed, sprayed or otherwise treated to allay dust; and

(d) of a width 2.5 times, or where the road is a one way road, 1.5 times, the width of the widest haulage vehicle used at the mine.

PART 11 - SAFETY UNDERGROUND

87. COMMUNICATIONS

Means of communications shall be provided between the surface and areas underground at a mine and in other areas as directed by an inspector.

88. CELLULAR POLYURETHANE FOAM

Unless approved, polyurethane foam manufactured essentially from poly-hydroxy compounds or polyisocyanates shall not be used underground at a mine.

89. PERSONS WORKING ALONE

A person who is working alone underground at a mine and not in frequent communication or hearing of other persons shall be visited at intervals, not longer than 2 hours, by a person directed by the manager.

90. ESCAPE OR EXIT WAYS

(1) Where there is a shaft, adit or decline at a mine, a means by which a person may escape or exit from the shaft, adit or decline shall be provided.

(2) A means of escape or exit provided under subregulation (1) shall be maintained at all times and signposted to indicate the method of escape or exit from the shaft, adit or decline.

(3) Where workings or new sections are being developed underground at a mine, single access to and from the workings or a new section is sufficient where a passageway, independent and separate from the principal access, is planned and put in place at a practicable time to the satisfaction of an inspector.

91. REFUGE STATIONS

(1) Refuge or shelter stations shall be installed underground at a mine for use in emergencies.

(2) The capacity of and the support and rescue provisions to be contained in a station referred to in subregulation (1) shall be such as to cope with the normal number of persons working in the area where the station is installed.

(3) A station referred to in subregulation (1) may be combined with or form part of a cribroom.

(4) An inspector may give directions relating to the location, establishment, provisioning and maintenance of a station referred to in subregulation (1).

92. MINE LIABLE TO WATER OR GAS INUNDATION

Where workings at a mine may be inundated by or subject to an inrush of water or gas, the working face shall be preceded with sufficient bore holes to give adequate warning of the likelihood of contact with water or gas and the manager shall ensure that safety precautions appropriate for the workings are taken.

93. ENTRY TO ORE PASSES

A person shall not enter the top of an ore pass at a mine unless -

(a) the feed to the ore pass has stopped and the feed mechanism is isolated;

(b) the person is wearing a safety belt with not more than 2 metres of rope; and

(c) the person is assisted by another person.

94. OBSTRUCTED ORE PASSES

(1) Where an ore pass at a mine is obstructed or jammed, a person shall not go into or beneath the pass and the state of the pass shall be reported to the manager.

(2) Material that is obstructing or jamming an ore pass referred to in subregulation (1) shall be freed by a method determined by the manager.

95. WORKINGS APPROACHING EACH OTHER

Where a drive or working at a mine is within 10 metres of another working, whether or not work is being carried out at that working -

(a) only one end shall be advanced;

(b) the end of the stopped working shall be checked for misfires and have all butts flushed out; and

(c) barricades and signposts shall be erected at the stopped end to prevent entry.

96. PERSONNEL CHECK SYSTEMS

The manager of a mine shall establish a personnel check system to account for all persons working underground at the mine.

97. DECLINES

Special provisions for a decline at a mine shall be formulated with respect to, but not restricted to -

(a) speed limits;

(b) right of way; and

(c) other traffic control measures.

98. VEHICLE TRAVELLING WAY REFUGES

When required by an inspector, safety refuges of adequate dimension shall be provided at a mine.

99. LADDERWAYS TO BE CASED OFF FROM HAULAGE COMPARTMENTS

A person shall not ascend or descend a portion of a shaft at a mine by ladderway while the haulage portion of the shaft is in use, unless the haulage portion is cased or securely fenced off from the ladder compartment.

100. INSPECTIONS

A shaft at a mine used for travelling shall be inspected -

(a) not less than once each week; and

(b) before being used following a period of 24 hours or more during which it was not used,

to ensure that it is safe to be used for that purpose.

101. TRAVELLING WAY AND SHAFT INSPECTION

(1) A person shall not be permitted to travel by a travelling way at a mine -

(a) in or near which work has been carried out, where damage may have occurred to the travelling way; or

(b) which has been repaired,

until it is inspected by the manager.

(2) A person shall not be permitted to travel in a shaft at a mine, down which material has fallen, until it is inspected by the manager to ensure that no damage has occurred in it.

102. INSPECTIONS TO BE RECORDED

The results of an inspection carried out under regulation 100 or 101 shall be recorded in the mine record book.

103. ABANDONED SHAFTS AND DRIVES

Unless otherwise approved by an inspector, where a shaft or drive at a mine ceases to be used or is abandoned for mining purposes, the shaft or drive shall be rendered safe by securely fencing or filling the shaft or drive.

PART 12 - ENGINES UNDERGROUND

104. TYPE OF ENGINES

An internal combustion engine, other than a diesel engine, shall not be installed or used underground at a mine.

105. STATIONARY ENGINES

Before a stationary or fixed engine is installed underground at a mine, details of the location, installation and operating methods of the engine, and safety precautions to be used in the case of an emergency involving the engine, shall be forwarded to an inspector.

106. IDLING OF ENGINES

A diesel engine on a stationary vehicle being used underground at a mine shall not be left running, except for short periods when necessary, and only while a person remains in control of the engine.

107. TYPE OF FUEL

Oil which -

(a) has a closed cup flash point of less than 61^0 C; or

(b) contains more than 0.5% by weight of sulphur,

shall not be used underground at a mine for fuelling a vehicle fitted with a diesel engine.

108. STORAGE OF FUEL, &c.

Fuel oil, oil and lubricants used underground at a mine shall be stored in an oil storage room that -

(a) is constructed of non-flammable material; and

(b) has a suitably paved and drained floor and a covered sump capable of holding not less than one and a half times the quantity of fuel oil, oil and lubricants stored in the room.

109. SAFETY IN FUEL STORAGE AREAS

A person shall not -

(a) service a diesel engine; or

(b) smoke or use a naked light,

in or within 8 metres of an oil storage room referred to in regulation 108.

110. TRANSPORT OF FUEL UNDERGROUND

Details of the methods of transporting fuel underground at a mine shall be forwarded to an inspector.

111. UNDERGROUND SERVICE STATIONS AND WORKSHOPS

A service station or workshop at a mine shall be constructed and ventilated to a standard approved by an inspector.

112. SAFETY EQUIPMENT ON VEHICLES

A light vehicle used underground at a mine shall be provided with -

(a) lights;

(b) efficient means for giving an audible warning signal;

(c) adequate protection for the driver; and

(d) an approved portable fire extinguisher placed within easy reach of the driver.

113. WORKING ON TOP OF EQUIPMENT

The bucket of a load haul dump at a mine shall not be used as a work platform, or used as a support for a work platform to secure or service the immediate area of a working face unless -

(a) there is an adequate level non slip surface for a person in, on or supported by the bucket; and

(b) the controls of the load haul dump are under the control of a qualified person at all times while a worker is being supported by the bucket.

PART 13 - VENTILATION

114. ADEQUATE VENTILATION TO BE MAINTAINED

(1) Ventilation shall be constantly produced in every working or occupied part of a mine -

(a) to such an extent that the part of the mine is in a fit state for a person to work in or to occupy; and

(b) so that the air passes through the part of the mine from inlet to outlet without local circulations.

(2) Where ventilation of a part of a mine is inadequate, work, other than that necessary to remedy the condition, shall not be performed in that part of the mine.

(3) A person performing work under subregulation (2) shall be provided with adequate protection while performing the work.

115. AIR QUALITY

Diesel engined operated equipment shall not be used underground at a mine if the undiluted exhaust gases of the equipment contain more than 1,000 parts per million of -

(a) carbon monoxide; or

(b) combined oxides of nitrogen calculated as nitrogen dioxide.

116. VENTILATION PLANS

When required by an inspector, the direction, course and volume of the air currents, and the position of air doors, stoppings, fans and ventilating devices at a mine shall be marked on the plan of the mine prepared under the Act.

PART 14 - WINDING

Division 1 - General

117. TRAINEE WINDING ENGINE DRIVER

(1) A person who is not the holder of a winding licence may operate, or be in charge of, a winding engine if -

(a) the person's name, age and address and a copy of a medical certificate relating to the person is forwarded to an inspector;

(b) the particulars, and a copy of the medical certificate, referred to in paragraph (a) are entered in the winding engine log book; and

(c) the person while operating or in charge of the winding engine, is under the direct supervision of a person who holds a winding licence to operate or be in charge of the winding engine.

(2) A medical certificate referred to in subregulation (1) shall be obtained from a medical practitioner and shall state that, in the opinion of the medical practitioner, the person is not suffering from any physical disability or condition which would make the

person unfit to operate or be in charge of a winding engine.

118. ENTRIES IN WINDING ENGINE LOG BOOK

(1) A winding engine driver shall enter in the winding engine log book for the winding engine the result of all tests carried out on the winding engine by the driver.

(2) The manager of a mine shall, not less than once each week, examine entries made under subregulation (1) and sign the winding engine log book.

119. INSPECTION OF WINDING EQUIPMENT

The manager of a mine or a person appointed under section 16 of the Act to assist the manager shall, in respect of a winding engine at the mine -

(a) not less than once each week, carry out a visual inspection of all attachments of the winding rope to the conveyance and counterweight, the conveyance and any safety device on the conveyance, the head sheaves, the brakes, all external parts of the winding engine, the shaft guides, all compartments of the shaft in which the winding engine is operated, all automatic controls on the winding engine, the signalling mechanism used in conjunction with the winding engine and the winding rope while it is travelling at a speed not more than one metre per second;

(b) not less than once each month, carry out an inspection of the winding rope to determine any structural deterioration of the rope -

(i) by cleaning the winding rope at places where it is liable to deteriorate and at other places not more than 30 metres apart;

(ii) by visually inspecting the rope and, where the diameter of the rope is reduced, the lay length of the rope; or

(iii) by another approved method;

(c) not less than once each 3 months, carry out a test on an automatic device on the winding engine, designed to prevent overwinding, by raising a conveyance or counterweight of the winding engine beyond a point at which the device would normally come into operation and by

attempting to land the conveyance or counterweight, when ascending and descending at speed greater than that permitted by these Regulations, into a landing established for the purpose of the test;

(d) in the case of a friction winding engine, not less than once each 3 months, inspect the shaft and all equipment and ropes in the space above the sump at the shaft bottom;

(e) not less than once each 6 months, dismantle and clean the detaching hook of the winding engine, measure it for deformation, inspect it for corrosion or other imperfections and test it with approved crack detection equipment; and

(f) not less than once each 12 months -

(i) measure all chains, chain links, shackles and pins used in connection with the winding engine to determine any wear; and

(ii) carry out an inspection for deformation, corrosion or other imperfections and test, with approved crack detection equipment, all attachments connecting the winding rope to the conveyance and counterweights.

(3) After carrying out a test under subregulation (2)(c), the manager or person who carried out the test shall -

(a) examine all suspension hooks and safety devices on the winding engine;

(b) clean and oil those hooks and devices;

(c) record in the winding engine log book the results of the test; and

(d) forward the results to the Chief Government Mining Engineer.

120. TESTING OF BRAKES

A winding engine driver shall, before commencing to operate a winding engine at the beginning of a shift, test the brakes of the winding engine against the full rated load of the drive motor of the engine and ensure that the brakes are working and holding.

121. SERVICE BRAKE TO BE FULLY APPLIED

A winding engine driver at a mine shall ensure that the service brake on the winding engine is fully applied while persons are entering or leaving a conveyance of the winding engine.

122. WINDING ENGINES TO BE READY FOR USE

When a person is underground at a mine and the usual means of reaching the surface is by a winding engine operated by a winding engine driver, the manager of the mine shall ensure that -

(a) a winding engine driver who is authorised to operate or be in charge of the winding engine is available to operate the winding engine;

(b) the winding engine is maintained ready for use; and

(c) a person is available on the surface to receive communications from underground.

123. MONKEYS IN SHAFTS

(1) A kibble and monkey arrangement or conveyance shall not be used at a mine for haulage in a shaft unless it is approved.

(2) A kibble and monkey arrangement used in a shaft shall be -

(a) constructed so that the distance from the base of the kibble to the lowest structure of the monkey across the mouth of the kibble is not less than 2 metres; and

(b) fitted with an overhead cover for the protection of persons travelling in it.

124. KIBBLES

(1) A kibble used in a shaft sinking operation at a mine shall be -

(a) of robust construction;

(b) designed to avoid catching on an obstruction during its movement in the shaft; and

(c) be suspended by a bridle or not less than 3 chains.

(2) The chains referred to in subregulation (1)(c) shall -

(a) be equally spaced around the perimeter of the top of the kibble;

(b) be of identical dimensions and strength;

(c) be of sufficient length to ensure that the smaller angle at the apex of the suspension of any 2 chains is not greater than 60°; and

(d) have a combined factor of safety of not less than 20.

125. MAXIMUM PERIOD FOR OPERATION OF WINDING ENGINE

(1) Except with the approval of an inspector, or during an emergency -

(a) a person shall not operate or be in charge of a winding engine; or

(b) the manager of a mine shall not permit a person to operate or be in charge of a winding engine,

for longer than 10 consecutive hours in a 24 hour period.

(2) For the purposes of subregulation (1) -

(a) meal times; and

(b) any time when the winding engine is not operating due to a breakdown,

may be disregarded.

126. CARRIAGE OF TOOLS, MATERIALS, &c.

(1) Subject to subregulation (2), a person shall not travel in a conveyance which is being used to carry material.

(2) Subregulation (1) does not apply where -

(a) the approval of an inspector has been obtained; or

(b) the material being carried is -

(i) a scientific instrument;

(ii) tools in a container;

(iii) tools or material to be used in repairing a shaft; or

(iv) fire-fighting or rescue equipment.

127. RIDING IN CONVEYANCES

A person at a mine shall not ride in -

(a) a conveyance if equipment, lengths of timber or rails are slung below, or explosives are being carried in, the conveyance; or

(b) a deck of a multi deck conveyance while material is being carried in the upper deck of the conveyance.

128. SIGNALLING FROM CONVEYANCES

(1) Subject to subregulation (2), where a conveyance is used in a shaft at a mine, an approved means of signalling between a plat or brace in the shaft and the winding engine shall be installed.

(2) Notwithstanding subregulation (1), where a shaft is being sunk, inspected or repaired, a knocker line may be used as a means of signalling between a plat or brace in the shaft and the winding engine.

129. CODE OF SIGNALS

(1) Subject to these Regulations, the signals which may be given at a mine to or by a winding engine driver are those specified in column 1 of Schedule 4.

(2) A winding engine driver at a mine shall, on receiving a signal specified in column 1 of Schedule 4, carry out the action specified opposite in column 3 of the Schedule in accordance with this regulation and a special requirement in relation to the signal specified opposite in column 4 of the Schedule.

(3) Except in an emergency or when approved, a winding engine driver shall, on receiving a signal specified in Schedule 4, when the conveyance of the winding engine is -

(a) stationary -

(i) return the signal; and

(ii) wait 6 seconds before performing the actions required by the signal; or

(b) in motion -

(i) return the signal; and

(ii) perform the action indicated by the signal.

(4) Where a person gives the signal specified in Schedule 4 by 5 knocks or rings, the person shall -

(a) before giving the signal ensure that no person is in the conveyance of the winding engine;

(b) repeat the signal after it is returned in accordance with subregulation 3(a)(i); and

(c) not permit a person to enter the conveyance of the winding engine until the action required by the signal has been carried out.

130. NOTICE OF SIGNALS TO BE DISPLAYED

A notice containing the signals referred to in regulation 129 shall be clearly and conspicuously displayed at a mine -

(a) in full view of a winding engine driver;

(b) at a working plat or brace; and

(c) at such other places as directed by an inspector.

131. SIGNALS DURING DEVELOPMENT WORK

Where a shaft is being developed at a mine or repairs are being carried out on a shaft, signals other than those specified for normal winding activity may be used while the shaft is being developed or the repairs are being carried out if the person in charge of developing the shaft or the repairs -

(a) notifies the winding engine driver of a winding engine operating in the shaft of those signals; and

(b) informs the winding engine driver at the beginning of a shift, before the winding engine driver first commences to operate the winding engine, of the work to be performed on the shaft during the shift.

Division 2 - Winding Engines

132. STANDARD OF WINDING ENGINES

(1) A winding engine at a mine shall be fitted with -

(a) a depth and speed indicator, driven from the sheave or drum shaft;

(b) a dial or gauge to show whether power is available at the engine;

(c) an emergency stop switch or control, situated within easy reach of the winding engine driver; and

(d) a device which automatically -

(i) prevents a conveyance from travelling at a speed 10% faster than the approved maximum;

(ii) limits the speed of a conveyance in a part of the shaft as may be specified by an inspector; and

(iii) where persons are transported by the winding engine -

(A) prevents a personnel conveyance being lowered or raised more than 600 millimetres beyond the highest or lowest landing;

(B) prevents a personnel conveyance being accelerated or decelerated at a rate greater than 1.5 metres per second per second;

(C) in the event of a malfunction, decelerates a personnel conveyance at a rate not less than 2 metres per second per second but not greater than 5 metres per second per second; and

(D) limits the rate of speed of a personnel conveyance to not more than 1.5 metres per second when it is within 15 metres of the lowest or highest landing.

(2) A winding engine shall not be used at a mine if a device required to be fitted to it under subregulation (1) is disconnected or not functioning.

133. CONTROL METHODS IN WINDING ENGINES

Where a winding engine is capable of different modes of operation -

(a) the device for selecting the mode shall be secured against unauthorised operation; and

(b) the control devices used by the winding engine driver in the manually operated mode are of the "dead man's" release type.

134. OVERWIND PREVENTOR TO BE PROVIDED

Where a winding engine is operated at a mine, a device shall be installed at the shaft, headframe or tower which will automatically stop a conveyance, counterweight or an attachment to the winding rope before it reaches an overwind position.

135. OVERWINDS

(1) A winding engine shall be fitted with a device that indicates to the winding engine driver an overwind of the winding engine.

(2) All persons operating doors, or other shaft protection devices, which do not operate automatically, shall be notified by the winding engine driver of an overwind of the winding engine.

136. BACKING OUT FROM OVERWIND PREVENTOR POSITION

A device fitted to a winding engine at a mine, which enables the winding engine to back out from the overwind preventor position, shall only -

(a) be capable of being operated manually; and

(b) allow backing out from a position determined by the device fitted in accordance with regulation 132.

137. OVERWOUND CONVEYANCE ARRESTOR TO BE PROVIDED

(1) Where a winding engine at a mine is used to transport persons, there shall be fitted at the shaft, headframe or tower and in the part of the shaft below the lowest landing -

(a) a device which, in the event of an overwind of the winding engine, will bring a conveyance to rest when it is being -

(i) raised, at a rate not exceeding 9.8 metres per second per second; or

(ii) lowered, at a rate not exceeding 24.5 metres per second per second; and

(b) a device which will prevent a conveyance falling down the shaft after being brought to rest by a device referred to in paragraph (a).

(2) Where a drum winding engine is used at a mine, the device required under subregulation (1)(b) is in addition to the detaching hook.

(3) Platforms and ladders shall be provided at a mine to enable persons to evacuate safely from an overwound conveyance.

(4) Where a personnel conveyance is suspended in a shaft by a single rope an arrestor shall be fitted at the bottom of the shaft.

138. MAXIMUM LOAD OF WINDING ENGINES

(1) In this regulation, the maximum safe working load of a winding engine is that specified by the manufacturer less the mass of the winding rope calculated by reference to the depth of the shaft.

(2) A winding engine at a mine shall not be used to raise or lower a load greater than the maximum safe working load of the winding engine.

(3) A sign displaying the maximum safe working load of a winding engine shall be clearly and conspicuously displayed at a mine.

Division 3 - Ropes

139. ROPE HISTORY

(1) The manager of a mine shall enter in the winding engine log book a history of each winding rope used on a winding engine.

(2) Without limiting the generality of subregulation (1), the history shall include -

(a) the name or location of the shaft in which the rope is used;

(b) the compartment of the shaft in which the rope is used;

(c) the manufacturer's name and certificate number;

(d) the date the rope is installed;

(e) the date the rope is recapped;

(f) the date when a test required by these Regulations is carried out on the rope;

(g) the result of a test carried out on the rope;

(h) the date when the rope is taken out of service and the reason for that action; and

(j) the date when the rope is examined, cleaned and oiled in pursuance of these Regulations.

140. CHAINS NOT TO BE USED IN PLACE OF WINDING ROPES

(1) This regulation does not apply to or in relation to the suspension of a kibble in a shaft sinking operation.

(2) Subject to subregulation (3), a chain shall not be used in place of the winding rope of a winding engine in a shaft at a mine where persons are being transported by the winding engine.

(3) Two coupling chains, each not more than 2 metres in length, may be used to attach a conveyance to a winding rope of a winding engine in a vertical shaft at a mine, where the chains -

(a) are of identical dimension;

(b) are parallel to each other and to the end of the winding rope; and

(c) have a combined safety factor of not less than 20.

141. WINDING ROPES TO BE CERTIFIED AND TESTED

A winding rope shall not be used at a mine unless the manager has given to an inspector a certificate (or a copy) issued by the manufacturer of the rope or an approved testing authority setting out, in relation to the rope -

(a) the date of manufacture;

(b) the type of construction;

(c) the diameter and circumference;

(d) the length;

(e) the mass per metre;

(f) the class of steel used in its manufacture; and

(g) the breaking strength.

142. OLD ROPES NOT TO BE USED

(1) Unless approved by an inspector, only new rope shall be fitted to a winding engine for use as a winding rope at a mine.

(2) An approval under subregulation (1) shall not be given unless -

(a) a complete history of the rope is; and

(b) details of the proposed use of the rope are,

given to the inspector by the manager.

(3) An inspector may require a rope that is fitted to a winding engine to be tested.

143. SPLICED ROPES NOT TO BE USED

A rope that has been spliced along the length of the rope shall not be used at a mine as a winding rope.

144. DRUM WINDING ROPES - FACTORS OF SAFETY

(1) The load applied to a rope on a drum winding engine shall not, at any time in its working life, when used for a purpose specified in column 1 of the Table to this regulation, result in a factor of safety less than the factor specified opposite in column 2 of the Table.

TABLE

Column 1 Purpose	Column 2 Factor of safety
Transporting a person and material or where the safety of persons is involved	7.5 less 0.001 LW
Transporting rock or material where the safety of persons is not involved	6.5 less 0.003 LW
Transporting rock in a shaft used exclusively for that purpose	4.5
Transporting a machine or part of a machine at a speed of less than 2 metres per second	5
Guide or rubbing rope	5
For raising or lowering a sinking stage in a shaft sinking operation	6

(2) For the purposes of the Table to this regulation, "LW" is the maximum length of suspended rope expressed in metres.

145. WITHDRAWAL OF ROPES

A rope shall not be used as a winding rope at a mine where -

(a) on a physical inspection, the rope may be unsafe for the use to which it is being put;

(b) the breaking strength of the rope is less than 90% of the rated breaking strength of the rope; or

(c) there are less than 3 anchorage turns of the rope remaining on the drum when the conveyance attached to the rope is at its lowest possible position in the shaft.

146. GUIDES IN VERTICAL SHAFTS

Where a conveyance is installed in a vertical shaft at a mine approved guides and appliances to steady the load being transported by the conveyance shall be installed in the shaft.

Division 4 - Conveyances

147. CONVEYANCE TO BE PROVIDED

A conveyance to transport persons shall be provided in a shaft at a mine.

148. STANDARD OF CONSTRUCTION OF CONVEYANCES

(1) This regulation does not apply to or in relation to a shaft during shaft sinking operations.

(2) A conveyance in a shaft at a mine shall not be used to transport persons unless -

(a) the height, measured from the floor of the conveyance to the top cover of the conveyance or to the underside of the moving parts of the safety appliances on the conveyance, whichever is the lower, is not less than 2 metres;

(b) an overhead cover, with a strength equivalent to or greater than a 4.5 millimetres thick steel plate, which is capable of being lifted from within the conveyance, is securely hung on hinges and resting in a sloping position on the conveyance;

(c) if the conveyance is a multi-deck conveyance, it has a trap door and a ladder fitted in the intermediate decks or lower decks to provide access between decks;

(d) the sides of the compartments of the shaft in which the conveyance is situated are covered with metal plate or expanded metal to contain persons and material within the conveyance;

(e) the conveyance is provided with a gate capable of being securely fastened to contain persons and material within the conveyance;

(f) the conveyance is adequately ventilated;

(g) the load bearing component of the conveyance has a factor of safety of not less than 10; and

(h) the design of the conveyance is approved by an inspector.

149. TESTING OF CONVEYANCES

(1) A conveyance in a shaft at a mine shall be tested before it is first used and after repairs are carried out to it by loading it to twice the mass of the normal load carried or proposed to be carried on it.

(2) Safety appliances fitted on a conveyance in a shaft at a mine shall be tested at least once a month or as required by the Chief Government Mining Engineer.

(3) A conveyance in a shaft at a mine shall not be used to transport persons after -

(a) a stoppage to repair a defect in the winding engine, shaft, conveyance or counterweight which may affect the safe operation of the winding engine;

(b) being idle for longer than 4 hours;

(c) a seismic occurrence at the mine;

(d) material has fallen down the shaft; or

(e) immediately before the change of a shift,

unless the conveyance has made one complete unobstructed trip up and down the shaft.

150. PROTECTION IN CONVEYANCE

Where a person is working or travelling in or on a conveyance in a shaft at a mine, the conveyance shall be fitted with a shield or other device to protect the person in the event of material falling down the shaft.

151. NUMBER OF PERSONS TO BE CARRIED IN CONVEYANCE

(1) The number of persons permitted to travel in a conveyance shall not exceed the number obtained by multiplying by 5 the area of the floor of the conveyance expressed in square metres.

(2) A sign stating the maximum number of persons permitted to travel in a conveyance shall be displayed in the shaft, at the brace and at each stopping place of the conveyance.

152. PERSONS NOT TO USE CERTAIN CAGES

A person shall not be transported in a skip in a shaft at a mine unless the person is standing -

(a) on the bottom of the skip; or

(b) on a platform provided in the skip for the person to stand on.

153. FACTOR OF SAFETY OF COMPONENTS OF ATTACHMENTS

(1) A component of an attachment between the winding rope and a conveyance or counterweight of a winding engine at a mine shall have a factor of safety of not less than 10.

(2) An attachment referred to in subregulation (1) shall be so constructed -

(a) to provide movement on 2 axes normal to each other and at right angles to the winding rope; and

(b) that no suspension member, in tension, is threaded.

154. USE OF HOOKS

An open hook or a hook that has not been approved shall not be used to attach a personnel conveyance to the winding rope of a winding engine.

155. PROVISIONS FOR BOARDING AND LEAVING CONVEYANCE

Such provisions, as may be directed by an inspector, shall be made for the safe boarding and leaving of persons from the conveyance of a winding engine in a shaft at a mine.

156. INTERLOCKING OF SHAFT DOORS AND WINDING ENGINE CONTROLS

(1) Where a winding engine, which is being used to transport persons in a shaft at a mine, is being operated by push-button controls located within the conveyance of the winding engine or at a landing in the shaft, the winding engine shall be fitted with a device which prevents it operating unless all shaft and conveyance doors relating to the winding engine are closed.

(2) Where a winding engine is being used to transport material in a shaft at a mine, the shaft doors relating to the winding engine may be able to be opened if the conveyance of the winding engine is within 10 metres of a landing and the winding engine is subject to inching control.

157. PUSH-BUTTON CONTROLS

Where a winding engine at a mine is operated by push-button controls located -

(a) at a landing, the controls shall be accessible to a person inside the conveyance only when the door of the conveyance is open (unless the automatic winding equipment requires that the winding engine be stopped before the cage door can be opened); or

(b) in the conveyance, a mechanical type push button shall be provided which, when operated, causes the winding engine to stop.

Division 5 - Drum Winding

158. TESTING OF ROPES

(1) Not less than once each 6 months -

(a) lengths of rope, not less than 2 metres in length, shall be cropped from each rope at the conveyance and counterweight ends of a drum winding engine; and

(b) the ends of the ropes shall be recapped.

(2) If required by the Chief Government Mining Engineer, at the expiration of one year after a winding rope is fitted to a drum winding engine, a length of the rope which repeatedly passes over a head sheave, sufficient to enable a breaking and elongation test of 2 metres of that rope to be made, shall be cropped from the conveyance and counterweight ends of the rope.

(3) At the expiration of 2 years after a winding rope is fitted to a drum winding engine, the entire length of the rope shall be tested in a approved manner.

(4) Where there are 2 or more layers of rope on a drum winding engine, the rope at the drum shall be cropped not less than once a year in such a way that the position of the cross-over points of the rope on the drum is changed.

(5) A length of rope cropped from a winding engine in accordance with subregulation (1)(b) or (2) shall be sent to an approved testing station for testing, and the results of the test forwarded to the Chief Government Mining Engineer not later than 21 days after the length of rope is cropped from the winding engine.

(6) If the results of a test carried out under subregulation (5) are not forwarded to the Chief Government Mining Engineer within the time specified in that subregulation, the winding rope shall not continue to be used as a winding rope.

(7) Where the Chief Government Mining Engineer requires the structure of a drum winding rope at a mine to be examined over its entire working length by a non destructive method, for the purpose of determining any deterioration in the rope, the manager shall immediately -

(a) cause such an examination to be made of the rope;

(b) record the condition of the rope, as determined by the examination, in the winding engine log book; and

(c) notify the Chief Government Mining Engineer of the results of the examination.

159. SIZE OF DRUM AND SHEAVE

(1) The diameter of the head sheave of a drum winding engine at a mine shall be, where the winding rope is -

(a) a locked coil rope, not less than 100 times the diameter of the rope; or

(b) any other type of rope, not less than 80 times the diameter of the rope.

(2) The depth of the rope groove in the head sheave of a drum winding engine at a mine shall be not less than twice the diameter of the winding rope.

160. BRAKES

(1) A drum winding engine at a mine shall be fitted with not less than -

(a) one brake to each drum, where more than one drum; or

(b) 2 brakes to the drum, where only one drum,

is fitted to the drum winding engine.

(2) A brake fitted to a drum winding engine at a mine shall -

(a) be able to be applied by the winding engine driver without the driver leaving the operating position of the engine;

(b) apply automatically -

(i) when the supply of power to the winding engine fails;

(ii) when the pressure of the fluid or other medium used as a means of applying the brakes falls below an approved level; or

(iii) if it is a push-button controlled winding engine, where a fault occurs in the push-button control circuit;

(c) be able to be applied manually irrespective of the automatic application of the brakes under paragraph (b);

(d) however applied, stop and hold a conveyance under all conditions of loading, direction of travel or at any rate of acceleration from any speed;

(e) act directly on a drum of the winding engine; and

(f) wherever practicable, be fitted with a steel tension member between the individual sole plates of the brake shoes.

(3) A drum winding engine shall not be used at a mine unless -

(a) the braking system is designed so that a failure of a component will not reduce the total braking effort of the system by more than 50% or prevent a conveyance on the winding engine from being brought to rest;

(b) if the winding engine is a push-button controlled winding engine, it is provided with a device which will automatically apply a brake and keep it applied when the brake is worn to an extent that affects its safe operation; and

(c) the factor of safety of -

(i) a threaded member in tension in the braking system is not less than 15; or

(ii) a part in the braking system which is not a threaded member in tension is not less than 10.

161. TESTING OF BRAKING SYSTEMS

(1) A braking system of a drum winding engine at a mine shall be tested -

(a) immediately after an adjustment to the system is carried out;

(b) not less than once each 3 months; or

(c) when directed by an inspector.

(2) Where more than one drum is fitted to a drum winding engine at a mine, a test under subregulation (1) shall ensure that when one drum is unclutched, the unclutched drum is capable of supporting a conveyance with a load equal to 1.5 times the approved full load, or 2.5 times the maximum approved passenger load, of the winding engine, whichever is the heaviest, when that conveyance is situated at the lowest level in the shaft.

162. TWIN-DRUM ENGINES

(1) Where a drum winding engine at a mine is fitted with 2 drums and one drum is unclutched, the drum that is unclutched shall be fitted with a device which automatically prevents the drum from revolving while it is unclutched.

(2) Except -

(a) with the approval of an inspector; or

(b) in an emergency;

a person shall not be raised, supported or lowered in the conveyance of a drum winding engine which is fitted with 2 drums while one of the drums is unclutched.

(3) When a drum winding engine is used in an emergency referred to in subregulation (2), the manager shall -

(a) make an entry of the circumstances of the emergency in the winding engine log book; and

(b) not later than 24 hours after the event, notify an inspector, in writing if required, of the circumstances of the emergency.

(4) A winding engine used in an emergency referred to in subregulation (2) shall be operated at not more than half the approved normal operating speed.

163. CERTAIN DRUM WINDING ENGINES NOT TO BE USED TO TRANSPORT PERSONS

A person shall not be transported in the conveyance of a drum winding engine at a mine which is fitted with -

(a) one drum; or

(b) 2 drums, one of which is unclutched,

if brakes fitted to the winding engine are the only means of preventing the descent of the conveyance.

164. PRECAUTIONS WHILE REPAIRS ARE EFFECTED

Where the clutch or a brake of a drum winding engine at a mine is being repaired, the conveyance of the winding engine shall -

(a) be removed from the shaft or headframe; or

(b) supported by means other than by the winding rope.

165. SAFETY MEASURES

(1) A conveyance of a drum winding engine at a mine shall be connected to the winding rope by a hook that will release the rope in the event of an overwind occurring.

(2) A drum winding engine at a mine shall be fitted with a device that gives notice, by visual or audible signal, to the winding engine driver that the winding rope is slack.

(3) A conveyance of a drum winding engine at a mine shall be fitted with a device that will prevent the conveyance falling down the shaft in the event of a rope or winding system failure.

Division 6 - Friction Winding

166. DRIVING SHEAVE DESIGN

(1) The diameter of a driving sheave of a friction winding engine at a mine, measured at the bottom of the rope groove, shall not be less than, where the winding rope is -

(a) a locked coil rope, 100 times; or

(b) any other type of rope, 90 times,

the diameter of the rope.

(2) The coefficient of friction between the rope treads on a driving sheave and the winding rope of a friction winding engine at a mine shall be such that slip, under normal out of balance acceleration and deceleration, is minimal.

(3) The grooves in a multi-grooved sheave of a friction winding engine at a mine shall be of substantially the same root diameter.

167. MAXIMUM LOADS

A load shall not be transported in the conveyance of a friction winding engine at a mine if the mass of the load is such that more than 70% of the braking torque would be required to stop and hold the driving sheave of the winding engine.

168. BRAKES

(1) The driving sheave of a friction winding engine at a mine shall be fitted with not less than 2 brakes.

(2) A brake fitted to a friction winding engine shall -

(a) be able to be applied by the winding engine driver without the driver leaving the operating position of the engine;

(b) apply automatically when -

(i) the supply of power to the winding engine fails;

(ii) the pressure of the fluid or other medium used as a means of controlling the brake falls below an approved level; or

(iii) if it is a push-button controlled winding engine, a fault occurs in the push-button control circuit;

(c) be able to be applied manually irrespective of the automatic application of the brake under paragraph (b);

(d) however applied, stop and hold a conveyance under all conditions of loading, direction of travel or at any rate of acceleration from any speed;

(e) be fitted to act directly on the driving sheave;

(f) wherever practicable, be fitted with a steel tension member between individual sole plates of the brake shoes;

(g) when applied, other than by an emergency stop switch or control, be capable of producing a braking torque -

(i) when transporting persons, of not less than 3 times; or

(ii) when transporting materials, of not less than 2 times,

the maximum out of balance static torque which may be applied to the driving sheave by the maximum safe working load; and

(h) when applied by any means, produce a braking torque not greater than 70% of that which causes the winding rope to slip on the driving sheave, calculated using the minimum sliding coefficient of friction between the rope and the sheave.

(3) A friction winding engine shall not be used at a mine unless -

(a) the braking system is designed so that a failure of a component will not reduce the total braking effort of the system by more than 50% or prevent a conveyance on the winding engine from being brought safely to rest;

(b) if the winding engine is a push-button or automatically controlled engine, it is provided with a device which will automatically apply a brake and keep it applied when the brake is worn to an extent that affects its safe operation; and

(c) the factor of safety -

(i) of a threaded member in tension in the braking system is not less than 15; and

(ii) of any other part in the braking system is not less than 10.

169. EQUIPMENT FOR WINDING ENGINES

(1) A friction winding engine at a mine shall be fitted with -

(a) a device that automatically synchronizes the depth indicator and indicates the position of a conveyance in a shaft;

(b) a device that indicates the amount of slip of a winding rope relative to the driving sheave and which will stop the winding engine if a rate of slip is exceeded; and

(c) a device that indicates in which direction the driving sheave is turning.

(2) An adjustment of a device referred to in subregulation (1)(a) shall be made only while the brakes of the friction winding engine are applied and the engine is not operating.

170. DETACHING DEVICES

A detaching hook or detaching device for a cage, skip or counterweight shall not be used at a mine in conjunction with a friction winding engine.

171. SHEAVE DESIGN

(1) The diameter of a winding deflecting sheave of a friction winding engine at a mine shall be not less than 0.9 times the diameter of the corresponding driving sheave in the engine.

(2) The angle of contact of a rope on a deflecting sheave of a friction winding engine at a mine shall be sufficient to prevent the rope from slipping on the sheave.

172. FRICTION WINDING ROPES - FACTORS OF SAFETY

The load applied to a rope on a friction winding engine at a mine shall not, at any time in its working life, when used for a purpose specified in column 1 of the Table to this regulation, result in a factor of safety less than the factor specified opposite in column 2 of the Table.

TABLE

Column 1 Purpose	Column 2 Minimum factor of safety		
	Single rope	2 or 3 ropes	4 or more ropes
Transporting a person or a person and material or where the safety of persons is involved	7.5	6.9	6.3
Transporting rock or materials where the safety of person is not involved	6.8	6.2	5.6
Transporting rock in a shaft used exclusively for that purpose	6.3	5.7	5.1

Transporting a machine or part of a machine at a speed of less than 2 metres per second	5	5	5
Balance rope	6	6	6
Guide or rubbing rope	5	5	5

173. ROPES TO BE TESTED

A rope on a friction winding engine at a mine shall be tested in an approved manner and at approved intervals of time.

174. RATE OF ROPE STRETCH

Where a new rope is fitted to a friction winding engine at a mine -

(a) a rope stretch record of the rope shall be entered in the winding engine log book; and

(b) the following measurement details shall be entered in the winding engine log book in relation to the rope:

(i) its length, measured before going into service;

(ii) its length, measured after the first 100 fully laden haulage cycles;

(iii) its length, measured daily for the first 7 days of service;

(iv) its length measured weekly for the next 4 weeks of service following the period referred to in subparagraph (iii);

(v) its length, measured each month for the duration of the rope's working life.

175. UNSAFE ROPES TO BE DISCARDED

A rope on a friction winding engine at a mine which -

(a) is corroded;

(b) has indications that it is deteriorating; or

(c) has a length measurement exceeding that measured in regulation 174(b)(i) by more than 0.2%,

shall be discarded immediately.

176. ROPE DRESSING

A person shall not apply anything to a rope on a friction winding engine at a mine which may cause the rope to slip on the driving sheave.

177. ROPE BALANCING

Where more than one winding rope of a friction winding engine at a mine is attached to the conveyance or counterweight, the ropes shall be of equal tread lengths.

Division 7 - Shaft Sinking

178. APPLICATION

This Division applies to operations carried out when sinking a shaft at a mine.

179. USE OF CRANES PROHIBITED IN CERTAIN AREAS

(1) A crane shall not be used to raise material from an area being excavated -

(a) if the perimeter of the area is traversed by dividers or other structures that may obstruct the operation of the crane;

(b) if the material is raised more than 50 metres; or

(c) in any other case, unless approved.

(2) Unless approved, only cranes which are -

(a) of a slewing type; or

(b) located in a fixed position during hoisting and dumping operations,

shall be used when sinking a shaft.

180. CONDITIONS OF USE OF CRANES

(1) The load lifted by a crane shall not exceed 50% of the safe working load of the crane as specified by the manufacturer of the crane.

(2) An approved method of signalling or communicating between a person directing the movement of loads on a crane, the supervisor responsible for the operation of the crane and the driver of the crane shall be installed.

181. CARRIAGE OF PERSONS BY CRANES

A crane shall not be used to raise or lower persons at a mine -

(a) except with the approval of an inspector;

(b) unless the person is -

(i) in a kibble or similar conveyance and not more than a third of the person's body is outside the kibble or conveyance and the person is wearing a safety belt of an approved type; and

(ii) at all times within the sight of a person directing the movement of the crane; or

(c) if the person is raised more than 50 metres.

182. SAFETY IN SHAFTS WHILE CRANE IN USE

A person shall not enter or remain in a shaft which is being sunk while a crane is being used to raise material up the shaft.

183. ACCESS TO SHAFTS WITHOUT SINKING STAGE

(1) Subject to this regulation, where a sinking stage is not being used, ladders extending from the surface to the bottom of the shaft shall be installed.

(2) Subregulation (1) does not apply where 2 or more winding engines, with approved conveyances and independent power sources, are available for use in the shaft.

(3) For the purposes of subregulation (1), ladders shall be of solid construction, except that a chain ladder, not longer than 6 metres, may be used at the lower end of the shaft.

184. DOORS

Where a shaft is being sunk, doors or other devices shall be provided at the collar of the shaft to cover the sinking compartment while excavation operations are in progress and to prevent material falling into the shaft during dumping operations.

185. DOORS TO BE CLEARLY VISIBLE

A door or device referred to in regulation 184 which, when moved into the haulage way or travel area of a shaft, interferes or may interfere with the free passage of a conveyance of a winding engine in the shaft, the depth indicator of the winding engine shall be marked to indicate the location of the door or device, unless the

door or device is clearly visible to the driver of the winding engine.

186. SHAFT BOTTOM PROTECTION

Where a shaft is sunk below a level that is being worked, the shaft below that level shall be protected by a pentice approved by an inspector.

187. KIBBLE SPILLAGE

A kibble or skip used in a shaft sinking operation shall not be -

(a) filled with loose rock above its brim; or

(b) raised while material is attached to its outside surface.

188. SHAFT SINKING ROPES - INSPECTION AND MAINTENANCE

(1) Subject to subregulation (2), the provisions of this Part relating to the history, inspection, maintenance and discarding of winding ropes and attachments shall apply to a rope or attachment used in a shaft sinking operation as if the rope were a winding rope and the attachment were an attachment on a winding rope.

(2) A rope used to support a shaft sinking stage shall be inspected once each month, or at other intervals as determined by an inspector, to determine generally whether it is safe to continue being so used and in particular for -

(a) broken wires;

(b) an increase in the lay length;

(c) a reduction in the diameter; and

(d) corrosion.

PART 15 - DAMS

189. TAILINGS DAMS AND WATER STORAGE DAMS

(1) The construction or modification of a dam at a mine shall not commence without the approval of the Chief Government Mining Engineer.

(2) The manager shall supply to the Chief Government Mining Engineer the design and proposed method of construction of a tailings dam or water storage dam that is proposed to be constructed at a mine.

190. DAM SAFETY

(1) Notices warning of the dangers associated with a dam at a mine, shall be erected, in prominent positions, on all access routes approaching the dam.

(2) Life-saving equipment, of an approved type, shall be provided near a dam at a mine, when directed by an inspector.

PART 16 - DREDGES

191. LIFE-SAVING EQUIPMENT

The following life-saving equipment shall be kept readily accessible on a dredge at a mine:

(a) a number of life-jackets equal to the maximum number of persons that may be on the dredge at any one time;

(b) a life-buoy to which is attached 50 metres of light line; and

(c) a boat-hook not less than 2 metres in length.

192. LINE INDICATORS

Where a headline or sideline is used to secure a dredge at a mine, the line shall -

(a) when submerged or partially submerged, carry marker buoys;

(b) when suspended or clear of the water, be identified with reflective and luminescent markers, such that the line is visible at all times; and

(c) have the fixed ends clearly marked.

193. WARNING NOTICES

Notices warning of dredging operations at a mine shall be prominently displayed both upstream and downstream of the area where the dredging operations are taking place.

194. WORK BOATS

A boat used to transport persons to a dredge at a mine shall be of a type and equipped so that persons may be transported to the dredge without risk to their health and safety.

195. LIGHTS

A dredge at a mine shall be fitted with flashing amber lights to clearly indicate the location of the dredge during the night.

PART 17 - MISCELLANEOUS

196. REGULATORY OFFENCES

An offence against regulations 6, 10, 50, 53, 76(1), 118, 145 and 175 is a regulatory offence.

197. PENALTIES

A person who contravenes or fails to comply with these Regulations is guilty of an offence and is liable on conviction, if no other penalty other than by this regulation is prescribed, to a penalty not exceeding $10,000.

198. DEGREE OF IMPRACTICABILITY

It is a defence to a charge of or involving a contravention of a failure to comply -

(a) a regulation (other than regulations 6, 10, 50, 53, 76(1), 118, 145 and 175); or

(b) an Australian Standard,

that the observance of, or compliance with, the regulation or standard was not reasonably practicable in the circumstances.

199. REPEAL

The Mine Safety Control (Radiation Protection) Regulations (1988 No. 42) as continued in force by section 54(11) of the Act are repealed.

SCHEDULE 1

Regulation 4(1)

Part 2 - General

AS 1576	Code of practice for metal scaffolding (known as the SAA Metal Scaffolding Code)
AS 1596	LP Gas - Storage and handling
AG 601	Installation Code for gas burning appliances and equipment
AS 1657	Fixed platforms, walkways, stairways and ladders (known as the SAA Code for Fixed Platforms, Walkways, Stairways and Ladders)
AS 2865	Safe working in a confined space

Part 6 - Explosives

AS 2187	Explosives - Storage, transport and use (known as the SAA explosives code)
AS 2188	Explosives - Relocatable magazines for storage

Part 7 - Electricity

AS 1747	Reeling, trailing and feeder cables used for mining - Repair and testing
AS 1939	Degrees of protection provided by enclosures for electrical equipment (IP Code)
AS 2430	Classification of hazardous areas
AS 2802	Reeling and trailing electrical cables for mining and general use (other than underground coal mines) - Elastomeric flexible cables for working voltages 1.1/1.1 kV up to and including 33/33 kV
AS 3000	Electrical installations - Buildings, structures and premises (known as the SAA Wiring Rules)
AS 3001	Electrical installations - Movable premises (including caravans) and their site installations
AS 3007	Electrical installations - Surface mines and associated processing plants

Part 8 - Machinery

AS 1200	Boilers and pressure vessels (known as the SAA Boiler Code)
AS 1210	Unfired Pressure Vessels (known as the SAA Unfired Pressure Vessels Code)
AS 1228	Boilers - Water tube
AS 1271	Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels
AS 1418	Cranes (including hoists and winches) (known as the SAA Crane Code)
AS 1735	Passenger and goods lifts
AS 1755	Conveyors - Design, construction, installation and operation - Safety requirements
AS 1797	Boilers - Fire-tube, shell, and miscellaneous
AS 1873	Explosive - powered hand-held fastening tools, fasteners and explosive charges
AS 2359	Industrial trucks (known as the SAA Industrial Truck Code)
AS 2593	Boilers - Unattended and limited attendance
AS 3788	Boilers and pressure vessels - In-service inspection
AS 3873	Boilers and pressure vessels - Operation and maintenance
AS 3992	Boilers and pressure vessels - Welding and pressure certification

Part 9 - Mobile Equipment

AS 2294	Earth-moving machinery - Protective structures
AS 2664	Earthmoving machinery - Seat belts and seat belt anchorages

Part 14 - Winding

AS 3637	Underground mining - Winding suspension equipment
AS 3751	Underground mining - Slope haulage - Couplings, drawbars, and safety chains
AS 3785	Underground mining - Shaft equipment

SCHEDULE 2

Regulation 4(2)

Part 2 - General

AS 1318	Use of colour for the marking of physical hazards and the identification of certain equipment in industry (known as the SAA Industrial Safety Colour Code)
AS 1339	Code of practice for manual handling of materials
AS 1345	Identification of the contents of piping, conduits and ducts
AS 1470	Health and safety at work - Principles and practice
AS 1485	Safety and health in work rooms of educational establishments
AS 1885	Measurement of occupational health and safety performance
AS 1940	The storage and handling of flammable and combustible liquids (known as the Flammable and Combustible Liquids Code)
AS 2397	Guide to the safe use of lasers in the construction industry
AS 3012	Electrical installations - Construction and demolition sites
AS 3900	Quality management and quality assurance standards
AS 3911	Guidelines for auditing quality systems

Part 4 - Occupational Health

AS 1269	Acoustics - Hearing conservation
AS 1270	Hearing protectors
AS 1319	Safety signs for the occupational environment
AS 1336	Recommended practices for eye protection in the industrial environment
AS 1337	Eye protectors for industrial applications
AS 1338	Filters for eye protectors
AS 1678	Emergency procedure guide - Transport
AS 1680	Interior Lighting
AS 1715	Selection, use and maintenance of respiratory protective devices
AS 1716	Respiratory protective devices
AS 1800	The selection, care and use of industrial safety helmets
AS 1801	Industrial safety helmets
AS 2161	Industrial safety gloves and mittens (excluding electrical and medical gloves)
AS 2210	Safety footwear
AS 2211	Code of practice for laser safety
AS 2243	Safety in laboratories

AS 2375	Guide to the selection, care and use of clothing for protection against heat and fire
AS 2507	The storage and handling of pesticides
AS 2508	Safe storage and handling information cards for hazardous materials
AS 2670	Evaluation of human exposure to whole body vibration
AS 2763	Vibration and shock - Hand transmitted vibration - Guidelines for measurement and assessment of human exposure
AS 2772	Radio frequency radiation
AS 2985	Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust
AS 2986	Workplace atmospheres - Organic vapours - Sampling by solid absorption techniques
AS 3640	Workplace atmospheres - Method for sampling and gravimetric determination of inspirable dust
AS 3663	Acoustics and mechanical vibration - Definitions of fundamental quantities and their expression as levels
AS 3765	Clothing for protection against hazardous chemicals
AS 3780	Storage and handling of hazardous chemical materials
HB 9	Manual of industrial personal protection

Part 5 - Fire

AS 1221	Fire hose reels
AS 1715	Selection, use and maintenance of respiratory protective devices
AS 1716	Respiratory protective devices
AS 1840	Water (soda acid) type portable fire extinguishers
AS 1841	Portable fire extinguishers - Water (gas container) type
AS 1842	Portable fire extinguishers - Water (stored pressure) type
AS 1844	Portable fire extinguishers - Foam (gas container) type
AS 1845	Portable fire extinguishers - Foam (stored pressure) type
AS 1846	Portable fire extinguishers - Powder type
AS 1847	Portable fire extinguishers - Carbon dioxide type
AS 1848	Portable fire extinguishers - Halon type
AS 1849	Identification colours for portable fire extinguishers
AS 1850	Portable fire extinguishers - Classification, rating and fire testing
AS 1851	Maintenance of fire protection equipment
AS 2444	Portable fire extinguishers - Selection and location

Part 6 - Explosives

AS 2189	Explosives - Glossary of terms

Part 7 - Electricity

AS 1020	The control of undesirable static electricity
AS 1076	Code of practice for selection, installation and maintenance of electrical apparatus and associated

	equipment for use in explosive atmospheres (other than mining applications)
AS 1306	High voltage ac switchgear and controlgear - Disconnectors (isolators) and earthing switches
AS 1543	Electrical equipment of industrial machines
AS 1768	Lighting protection
AS 1802	Reeling and trailing electric cables for underground coal mining purposes
AS 2067	Switchgear assemblies and ancillary equipment for alternating voltages above 1kV
AS 2081	Electrical equipment for coal and shale mines - Electrical protection devices
AS 2229	Electrical equipment for explosive atmospheres - Electrical systems of dispensing equipment
AS 2293	Emergency evacuation lighting in buildings
AS 2467	Maintenance of electrical switchgear
AS 2081	Electrical equipment for coal and shale mines - Electrical protection devices
AS 2293	Emergency evacuation lighting in buildings
AS 2467	Maintenance of electrical switchgear
AS 2790	Electricity generating sets - Transportable (up to 25kW)
AS 3005	Electrical installations of tents and similar temporary structures
AS 3008	Electrical installations - Selection of cables
AS 3010	Electrical installations - Supply by generating set
AS 3760	In-service safety inspection and testing of electrical equipment
AS 4439	Low voltage switchgear and controlgear assemblies

Part 8 - Machinery

AS 1135	Rules for the design, fabrication, installation and inspection of non-ferrous pressure piping (known as the SAA Non-ferrous Pressure Piping Code)
AS 1138	Thimbles for use with wire rope or fibre (natural or synthetic) rope
AS 1219	Power presses - Safety requirements
AS 1353	Flat synthetic webbing slings
AS 1380	Fibre-rope slings (of natural or synthetic rope)
AS 1438	Wire-coil flat slings
AS 1473	Code of practice for the guarding and safe use of woodworking machinery
AS 1666	Wire-rope slings
AS 1674	Safety in welding and allied processes
AS 1677	Refrigerating Systems
AS 1788	Abrasive wheels
AS 1796	Certification of welders and welding supervisors (known as the SAA Welder Certification Code)
AS 1892	Portable ladders
AS 1893	Code of practice for the guarding and safe use of metal and paper cutting guillotines
AS 2076	Wire rope grips
AS 2321	Short-link chain for lifting purposes (non-calibrated)
AS 2549	Cranes - Glossary of terms
AS 2550	Cranes - Mobile, tower and derrick - Selection and operation

AS 2740	Wedge-type sockets
AS 2741	Shackles
AS 2927	The storage and handling of liquefied chlorine gas
AS 3775	Chain slings - Grade T
AS 3776	Lifting components for Grade T chain slings
AS 3777	Shank hooks and large-eye hooks - Maximum 25t
AS 4024	Safeguarding of machinery
AS 4100	Steel structures
B 291	Lifting rings and links
B 293	Side boom cranes for pipelaying (crawler-track type)
CB 15	Rules for welding of steel pressure piping (known as the SAA Pipe Welding Code)
CB 18	Rules for the design, fabrication, installation and inspection of pressure piping (known as the SAA Pressure Piping Code)
CZ 14	Guarding and safe use of milling machinery

Part 9 - Mobile Equipment

AS 1742	Manual of uniform traffic control devices
AS 1872	Safety chains for trailers and caravans
AS 2868	Classification of machinery for earthmoving, construction, surface mining, and agricultural purposes
AS 2951	Earth-moving machinery - Nomenclature
AS 2956	Earth-moving machinery - Instrumentation and operator's controls
AS 2957	Earth-moving machinery - Operation and maintenance
1S0 - 5010	Earthmoving Machinery/Rubber Tyred Machinery Steering Capability

Part 14 - Winding

AS 022	Mine guides, jarrah and karri
AS 1394	Round steel wire for ropes
AS 2318	Swivels for hoists
AS 2759	Steel wire rope - Application guide
AS 3569	Steel wire ropes

SCHEDULE 3

Regulation 19

Column 1	Column 2
Clause of Code	Appropriate Authority
3	Chief Government Mining Engineer
4	Chief Government Mining Engineer and Chief Medical Officer
6(2) definition of 'Inspector'	Chief Government Mining Engineer

Column 1	Column 2
Clause	Meaning
7(3)	Chief Government Mining Engineer and Chief Medical Officer
8(1)(a) and (b), (2)(c), (e), (f), (h) and (i) and (3)	Chief Government Mining Engineer
8(1)(c), (2)(a), (b), (d) and (g) and (4)	Chief Government Mining Engineer and Chief Medical Officer
9(4)(a), (5), (6), (10), (27), (31) and (32)	Chief Government Mining Engineer and Chief Medical Officer
9(14), (20) and (26)	Chief Government Mining Engineer
9(17)	Chief Medical Officer
13(3), (4) and (9)	Chief Government Mining Engineer and Chief Medical Officer
13(5)	Chief Government Mining Engineer
14(2)(a), (b) and (d)	Chief Government Mining Engineer and Chief Medical Officer
17(1), (2), (3)	Chief Medical Officer

SCHEDULE 4

Regulation 129

Column 1	Column 2	Column 3	Column 4
Signal (number of knocks or rings)	Meaning of signal	Action required of winding engine driver	Special requirements
		Part 1 - General	
1	stop or hold	(a) when conveyance in motion - stop conveyance	action taken, then signal to be returned

Column 1	Column 2	Column 3	Column 4
Signal (number of knocks or rings)	Meaning of signal	Action required of winding engine driver	Special requirements
		(b) when conveyance stationary do not move conveyance until further signal is given	
2	lower	lower conveyance	if winding engine is used for timbering or repairing, lowering shall be done with extreme care
3	hoist	hoist conveyance	(a) if winding engine is used for timbering or repairing, hoisting shall be done with extreme care (b) if given after a firing return signal, hoisting shall be done with extreme care
4	passengers on	move conveyance	to be returned by driver before loading and giving destination signal
5 repeated	change conveyance location	throw in or out of gear	not to be given while conveyance is in motion
6	conveyance not required	move conveyance	

Column 1	Column 2	Column 3	Column 4
Signal (number of knocks or rings)	Meaning of signal	Action required of winding engine driver	Special requirements
7	firing warning	raise conveyance by giving the drum of the engine at least one full revolution and then lower it as a sign of readiness to hoist, then stand ready at engine	
8	material or tools on	drive slowly	
12	accident signal	to be followed after pause by the signal for the level where the conveyance is required	
	Part 2 - Level Signals		
1 then 1	No. 1 level	hoist or lower to specified level	
" 2	No. 2 level		
" 3	No. 3 level		
" 4	No. 4 level		
" 5	No. 5 level		
2 then 1	No. 6 level		
" 2	No. 7 level		
" 3	No. 8 level		
" 4	No. 9 level		
" 5	No. 10 level		
3 then 1	No. 11 level		
" 2	No. 12 level		
" 3	No. 13 level		
" 4	No. 14 level		
" 5	No. 15 level		
4 then 1	No. 16 level		
" 2	No. 17 level		
" 3	No. 18 level		
" 4	No. 19 level		
" 5	No. 20 level		

Column 1	Column 2	Column 3	Column 4
Signal (number of knocks or rings)	Meaning of signal	Action required of winding engine driver	Special requirements
5 then 1	No. 21 level		
" 2	No. 22 level		
" 3	No. 23 level		
" 4	No. 24 level		
" 5	No. 25 level		
6 then 1	No. 26 level		
" 2	No. 27 level		
" 3	No. 28 level		
" 4	No. 29 level		
" 5	No. 30 level		
7 then 1	No. 31 level		