(10 October 2015 – to date)

MINE HEALTH AND SAFETY ACT 29 OF 1996

(Gazette No.17242, Notice No. 967 dated 14 June 1996. Commencement date: 15 January 1997 for all sections with the exception of sections 86(2) and (3), which came into operation on 15 January 1998, [Proc.No.4, Gazette No. 17725])

MINE HEALTH AND SAFETY REGULATIONS

Published under Government Notice R93 in Government Gazette 17725 dated 15 January 1997. Commencement date: 15 January 1997.

as amended by:

Government Notice R846, Gazette No. 18078 dated 21 June 1997. Commencement date: 21 June 1997.

Government Notice R1315 in Government Gazette 19354 dated 16 October 1998. Commencement date: 16 October 1998.

Government Notice R721 in Government Gazette 20155 dated 11 June 1999. Commencement date: 11 June 1999.

Government Notice R1486 in Government Gazette 20714 dated 17 December 1999 as corrected by GN R303 in Government Gazette 21029 dated 24 March 2000. Commencement date: 17 December 1999.

Government Notice R134 in Government Gazette 22055 dated 9 February 2001. Commencement date: 9 February 2001.

Government Notice R786 in Government Gazette 23498 dated 14 June 2002. Commencement date: 14 June 2002.

Government Notice R787 in Government Gazette 23498 dated 14 June 2013 (Correction Notice). Commencement date: 14 June 2002.

Government Notice R904 in Government Gazette 23583 dated 2 July 2002. Commencement date: 2 July 2002 except regulation 9.1(3) and 9.2(7), which take effect on 1 September 2002.

Government Notice R907 in Government Gazette 23586 dated 2 July 2002. Commencement date: 2 July 2002.

Government Notice R569 in Government Gazette 23410 dated 17 May 2002. Commencement date: 1 September 2002.

Government Notice R1573 in Government Gazette 24168 dated 13 December 2002. Commencement date: 13 December 2002.

Government Notice R1579 in Government Gazette 24168 dated 13 December 2002. Commencement date: 13 December 2002.

Government Notice R959 in Government Gazette 23615 dated 12 July 2002. Commencement date: 1 January 2003.

Government Notice R886 in Government Gazette 25097 dated 20 June 2003. Commencement date: 20 June 2003.

Government Notice R1237 in Government Gazette 25404 dated 29 August 2003. Commencement date: 29 August 2003.

Government Notice R1792 in Government Gazette 25812 dated 12 December 2003. Commencement date: 12 December 2003.

Government Notice R583 in Government Gazette 26333 dated 14 May 2004. Commencement date: 14 May 2004.

Government Notice 783 in Government Gazette 26496 dated 2 July 2004. Commencement date: 2 July 2004.

Government Notice R1304 in Government Gazette 26963 dated 12 November 2004 as corrected by GN R89 in Government Gazette 30698 dated 1 February 2008. Commencement date: 12 November 2004.

Government Notice R1323 in Government Gazette 26963 dated 12 November. Commencement date: 12 November 2004.

Government Notice R1224 in Government Gazette 28333 dated 15 December 2005 as corrected by Government Notice R 90 in Government Gazette 30698 dated 1 February 2008. Commencement date: 15 December 2005.

Government Notice R1225 in Government Gazette 28333 dated 15 December 2005 as corrected by Government Notice R 90 in Government Gazette 30698 dated 1 February 2008. Commencement date: 15 December 2005.

Government Notice R1226 in Government Gazette 28333 dated 15 December 2005. Commencement date: 15 December 2005.

Government Notice 911 in Government Gazette 29214 dated 8 September 2006. Commencement date: 8 September 2006.

Government Notice R989 in Government Gazette 29276 dated 5 October 2006. Commencement date: 5 October 2006.

Government Notice 34 in Government Gazette 29544 dated 19 January 2007. Commencement date: 19 January 2007.

Government Notice R1279 in Government Gazette 29458 dated 15 December 2006. Commencement date: 1 July 2007.

Government Notice 86 in Government Gazette 30697 dated 1 February 2008. Commencement date: 1 February 2008.

Government Notice R92 in Government Gazette 30698 dated 1 February 2008. Commencement date: 1 February 2008.

Government Notice R92 in Government Gazette 30698 dated 1 February 2008. Commencement date: 1 February 2008.

Government Notice R93 in Government Gazette 30698 dated 1 February 2008. Commencement date: 1 February 2008.

Government Notice R94 in Government Gazette 30698 dated 1 February 2008. Commencement date: 1 February 2008.

Government Notice R1053 in Government Gazette 33752 dated 12 November 2010. Commencement date: 12 November 2010.

Government Notice R1068 in Government Gazette 33763 dated 19 November 2010. Commencement date: 19 November 2010.

Government Notice R447 in Government Gazette 34308 dated 27 May 2011. Commencement date: 27 May 2011.

Government Notice R621 in Government Gazette 36761 dated 23 August 2013. Commencement date: 23 August 2013.

Government Notice R622 in Government Gazette 36761 dated 23 August 2013. Commencement date: 23 August 2013.

Government Notice R701 and Government Notice R702 in Government Gazette 37980 dated 12 September 2014. Commencement date: 12 September 2014.

Government Notice R906 in Government Gazette 38216 dated 21 November 2014. Commencement date: 21 November 2014.

Government Notice R330 and Government Notice R332 in Government Gazette 38708 dated 24 April 2015. Commencement date: 24 April 2015.

Government Notice R125 in Government Gazette 38493 dated 27 February 2015. Commencement date: 27 May 2015 (with the exception of sub-regulations 8.10.1.2(b) and 8.10.2.1(b))

Government Notice R584 in Government Gazette 38970 dated 10 July 2015. Commencement date: 10 October 2015.

Under section 98 of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), I, Penuell Mpapa Maduna, Minister of Minerals and Energy, hereby make the regulations in the Schedule.

P. M. MADUNA
Minister of Minerals and Energy

SCHEDULE

ARRANGEMENT OF REGULATIONS

(Table of Contents substituted by the Schedule in Government Notice R907 in Government Gazette 23586 dated 2 July 2002)

(Arrangement of Regulations substituted by the Schedule in Government Notice R1573 in Government Gazette 24168 dated 13 December 2002)

CHAPTER 1
APPOINTMENTS AND ADMINISTRATION

[An italicised word or phrase is defined in section 102 of the Act and such word or phrase in bold is defined in Chapter 20 of these regulations.]

Prescribed period for representations

1.1(1) Representations invited by the Principal Inspector of Mines as contemplated in section 55D(1)(b) must be submitted to the Principal Inspector of Mines within 30 days of the date of the invitation or within such further period or periods as the Principal Inspector of Mines may determine.

Prescribed period for payment of fine

1.2(1) A fine imposed on an employer in terms of section 55D, must be paid to the Principal Inspector of Mines within 60 days of the date on which the fine was imposed or within such further period or periods as the person or court imposing the fine, may determine.

1.2(2) The date on which the fine is imposed is regarded as the date on which notification of the administrative fine was served on the employer by-

(a) hand;

(b) registered post; or

(c) any other form of communication agreed to between the employer and the Principal Inspector of Mines.

(Chapter 1 inserted by the Schedule of Government Notice R1315 in Government Gazette 19354 dated 16 October 1998)

CHAPTER 3
ELECTRICITY

DEFINITIONS

In these regulations, unless the context indicates otherwise:

"**Accredited Test Laboratory**" (ATL) means an organisation that is accredited by the South African National Accreditation System (SANAS).

"**Arc Flash**" means an uncontrolled electrical discharge through the air between conductors or between a conductor and earth. The resulting discharge of energy can result in fire, serious damage to electrical apparatus and injury or death to a person.

"**Armouring**" means a metallic covering of an electric cable, in the form of tape, wire or tube enclosing one or more conductors to provide adequate mechanical protection against damage.

"**Bus-coupler**" means a device, or set of devices, needed to facilitate the connection of two parallel circuits.

"**Bus-section**" means a device, or set of devices, that will extend a bus-bar to another.

"**Circuit**" means an interconnection of electrical elements such as resistors, inductors, capacitors, transmission lines, voltage sources, current sources and switches which have a closed loop giving a return path for the current.

"**Clearance**" means a minimum distance any part of a person's body or any work tool may encroach to any unearthed, bare conductor or to any unearthed and unscreened conductor.

"**Collectively Screened**" means having a conductive covering enclosing all power conductors as well as all control conductors within the protective outer sheath of a cable.

"**Conductor**" means any substance or material which can transfer an electrical charge along or through it and is connected to an electrical circuit.

"**Dead**" means at or about zero potential with respect to the general mass of earth and disconnected from any live reticulation system.

"**Domestic Voltage**" means a voltage not exceeding 230V ± 10% alternating current phase to neutral.

"**Earthed**" means connected to the general mass of earth in such a manner as will ensure at all times an immediate discharge of electrical energy without risk.

"**Electrical Apparatus**" means any apparatus, machine and fitting in which conductors are used, or of which they form a part.

"**Electrical Single-Line Diagram**" means a diagram that shows, by means of single lines and graphic symbols, the general layout of an electric circuit or system of circuits.

"**Flexible cable**" means a cable of which the conductors consist of strands of diameter not exceeding 0,51 mm and of which the insulation and covering are such that they afford flexibility and in which the nominal cross sectional area of each conductor exceeds 4 mm^2, but shall not include signalling cable, telephone cable, blasting cable, or flexible cord used with electric apparatus at a voltage not exceeding domestic voltage alternating current on a single phase system.

"**Flexible cord**" means a cable of which the nominal cross sectional area of each conductor does not exceed 4 mm^2 and of which each conductor consists of strands of diameter not exceeding 0,31 mm.

"**Hazard Classification**" - A system developed for categorizing electrical hazards based on the voltage and fault level ratings for electrical components.

"**High Voltage (HV)**" a set of nominal voltage levels in the range 44 kV and above to 220 kV.

"**Individually Screened**" means having a conductive covering enclosing power conductors individually within the protective outer sheath of a cable.

"**Isolation**" means disconnecting the apparatus from all possible sources of electrical potential and locking the apparatus in such a manner so that no energisation can take place.

"**Insulated**" means covered with any material that has the characteristic of low electrical conductivity such as to prevent an electrical discharge.

"**Live**" means electrically charged.

"**Lockout-tagout**" (LOTO) or lock and tag is a safety procedure which is used to ensure that machines / switchgear and Electrical equipment are properly isolated, de-energized and tagged.

"**Low Voltage (LV)**" means a set of nominal voltage levels that are used for the distribution of electricity, the upper limit of which is an a.c. voltage of 1000V or a d.c. voltage of 1 500 V.

"**Medium Voltage (MV)**" means a set of nominal voltage levels above the range of 1 000 V to below 44 kV.

"**Metallic Covering**" means iron or steel armouring or metal conduit surrounding two or more conductors with or without a lead or other metallic sheath as required in terms of operational conditions.

"**Moveable Electrical Apparatus**" means electrical apparatus, excluding self-propelled mobile machines or portable electrical apparatus, which is not installed on permanent foundations and is intended to be moved from place to place.

"**Overhead Power Line**" means an overhead line erected to convey electrical energy for any purpose other than communication but excluding the overhead contact or catenary wires of an electrical traction system.

"**Permit to Work**" is a formal, written, safe system of work to control potentially hazardous activities. The permit details the work undertaken and the necessary precautions to be taken.

"**Portable Electric Apparatus**" means electric apparatus, which is designed to be carried by hand, and may require electric power while being used.

"**Reticulation System**" means a circuit or combination of circuits.

"**Substation**" means a location containing medium or high voltage switchgear and associated equipment for the purpose of isolation, feeding, protecting and energising electrical equipment and reticulation systems.

"**Switchgear**" general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures.

"**Trackless Mobile Machine**" means any self propelled mobile machine that is used for the purpose of performing mining, transport or associated operations underground or on surface at a mine and is mobile by virtue of its movement on wheels, skids, tracks, mechanical shoes or any other device fitted to the machine, but excludes:

a) rail bound equipment:

b) scraper winches, mono rail installations, static winches, winding machinery installations and any equipment attached thereto.

"**Trailing Cable**" means cable used to supply power to any mobile machine and movable electrical apparatus which is designed to be dragged across the ground.

REGULATIONS

3.1 The employer must take reasonable practicable measures to ensure that:

(1) the design of all electrical apparatus and electrical reticulation systems are approved by a competent person;

(2) all electrical apparatus are under the control of a competent person; and

(3) all electrical apparatus are installed, repaired and maintained by a competent person.

3.2 The employer must take reasonable practicable measures to ensure that no person suffers any electrical shock, arc flash or electrocution as a result of:

(a) exposure to electrical current flow;

(b) a person coming into contact with live exposed parts of any electrical apparatus;

(c) exposure to electricity, arc flash, all fault currents, overvoltage and surges;

(d) any electrical apparatus failing due to electromagnetic interference from other equipment;

(e) any electrical apparatus being incorrectly designed, installed, operated or maintained; and

(f) any exposure to blasts, fires or arc flashes resulting from electrical faults.

3.3 The measures contemplated in regulation 3.2 must include measures to ensure:

3.3.1 proper fencing off or enclosures or clearances of such electrical apparatus.

3.3.2 that an extension of any electrical reticulation system is approved by a competent person before being energised, taking into account the reticulation network and the effect thereon;

3.3.3 that only competent persons are permitted to energise, de-energise or isolate electrical apparatus where the operation of such apparatus poses a significant risk and that such apparatus are protected against unauthorised access and operation;

3.3.4 that only competent persons authorised in writing by the employer to do so; carry out switching procedures on MV or HV equipment; and

3,3.5 that where the interruption of electrical supply to any equipment could result in a significant risk, such electrical supply can be provided from another source or network, which can include an emergency supply alternator or generator, for power supply in the event of an interruption to the normal power supply.

3. 4 The employer must take reasonably practicable measures to ensure that at any place at a mine, where electrical apparatus is installed and which may constitute a danger to persons shall be:

(a) of adequate size so as to provide safe and unobstructed clear working space for operating and maintenance staff;

(b) constructed and ventilated in such a manner that the apparatus is kept at a safe temperature to safeguard persons;

(c) constructed in such a manner as to provide protection where necessary against the ingress of vermin and water:

(d) illuminated in such a manner as to prevent any danger to persons and to enable all equipment to be distinguished clearly and all instruments, labels and notices to be read clearly while it is live;

(e) equipped with effective means to safely disconnect the energy source; and

(f) equipped with an effective fire extinguishing system.

3.5 The employer must take reasonably practicable measures to ensure that at every substation there must be a legible, up to date single line drawing of the reticulation system, highlighting ring feeds, of which that substation is a part, displayed in a conspicuous place. Every substation must be clearly identified, and its position clearly marked on such drawing.

3.6 The employer must take reasonably practicable measures to ensure that the area in which a substation is located is clearly demarcated and that notices are displayed at every point of entry to such an area. These notices shall:

(a) prohibit access of any unauthorised person from accessing that area;

(b) set out the procedures to be followed in the event of a fire;

(c) set out the first aid treatment measures to be given to persons suffering from the effects of electric shock and burns;

(d) indicate the presence of electricity;

(e) describe measures to safely remove any person incapacitated as a result of contact with electricity; and

(f) have available an effective means of communication.

3.7 The employer must take reasonably practicable measures to ensure that all suspended electrical cables that could cause a fire due to faults or mechanical damage, in stopes, haulages or shafts either through damage by moving machinery or by fall of ground are properly protected by:

(a) switchgear which is electrically supplied and commissioned with discrimination settings for overload and earth fault protection to prevent a fire;

(b) switchgear installed which is correctly rated to prevent a fire or explosion;

(c) all cables in areas where a fire can occur must be fire retardant cables or be coated with fire retardant material at areas in close proximity with timber; and

(d) the employer must have a procedure to be followed in the event of such a fire.

3.8 The employer of every coal mine must take reasonably practicable measures to ensure that all new main reticulation underground substations are designed and located such that they vent into the return air-way.

3.9 The employer must take reasonably practicable measures to ensure that where mineral oil is used as the medium for insulation or cooling of electrical apparatus, adequate precautions are in place to address any significant risk in the event of an explosion, spillage or burning of the oil.

3.10 The employer must take reasonably practicable measures to ensure that where electrical apparatus is accessible from the front and the back, each such apparatus are identifiable by clearly labelled and legible markings on the front and back fixed portions of such apparatus and on switchgear shutters.

3.11 The employer must take reasonably practicable measures to ensure that where ring feeds including bus-sections and bus-couplers are accessible from the front and the back, each such apparatus are identifiable by clearly labelled and legible markings on the front and back fixed portions of such apparatuses and on switchgear shutters.

3.12 The employer must take reasonably practicable measures to ensure that all electrical apparatus used for the distribution of electrical power, except electrical apparatus which contains domestic voltages, are clearly marked with the maximum voltage that may be present therein.

3.13 The employer must take reasonably practicable measures to ensure that no examination, adjustment, testing, repair or other work necessitating the dangerous approach to or the handling of electrical apparatus shall be carried out unless such apparatus is dead: Provided that where such equipment must be live for the purpose of examination, adjustment, repair or other work it may be done by or under the direct supervision of a competent person.

3.14 The employer must take reasonably practicable measures to ensure that no person other than a competent person authorised in writing by the employer to do so, enters a place where electric apparatus is installed unless all live conductors therein are insulated adequately or otherwise protected effectively against inadvertent contact: Provided that such authorised competent person may in case of an emergency be assisted by a person acting under the immediate personal supervision of such authorised competent person.

3.15 The employer must take reasonably practicable measures to ensure that when work is to be carried out on electrical apparatus which have been isolated from all sources of electrical supply, effective precautions shall be taken:

i) by discharging all stored electrical energy, and

ii) testing for dead including any ring feeds by earthing such apparatus and, in the case of ring-feeds or dual supplies of power, by earthing on both sides of the associated electrical apparatus worked on, so as to prevent any conductor or apparatus from being made live while any person is working thereon.

3.16 The employer must take reasonably practicable measures to ensure that any accessible metallic portion of electric apparatus which, though not normally forming part of an electric circuit, may inadvertently become live, is insulated or earthed by a conductor of adequate cross-sectional area capable of withstanding the maximum possible earth fault current condition, so as to prevent any significant risk to persons for the duration that the fault current may be flowing in the circuit.

3.17 The employer must take reasonably practicable measures to ensure that whenever work is to be carried out on electrical apparatus which has been isolated from all sources of supply, effective precautions shall be taken by earthing or other means to discharge electrically such electrical apparatus or any adjacent electrical apparatus to prevent any conductor or apparatus from being made live accidentally or inadvertently while any person is working thereon.

3.18 The employer must take reasonably practicable measures to ensure that no metal ladder or ladder with metal reinforced stiles is used for examination, repair, or other work necessitating the dangerous approach to or work on electrical apparatus.

3.19 The employer must take reasonably practicable measures to ensure that any accessible metallic portion of electrical plant or apparatus which, though not forming part of an electrical circuit, may accidentally become live shall either be protected by an insulating material or shall be connected to earth by a conductor of adequate cross-section so as to prevent danger to persons.

3.20 The employer must take reasonably practicable measures to ensure that the cross-sectional area of any earthing conductor is calculated to be capable of withstanding the maximum possible earth fault current condition.

3.21 The employer must take reasonably practicable measures to draw up and implement a procedure for all energising, de-energising and isolation of medium or high voltage electrical apparatus.

3.22 The employer must take reasonably practicable measures to ensure that where any electrical cable is buried in the ground or installed in such a position that mechanical damage to it may occur, it is protected by armouring.

3.23 The employer must take reasonably practicable measures to ensure that all flexible cables or trailing cables may only be used in connection with the operation of-

(a) any self-propelled mobile machine which requires electric power to operate such machine;

(b) movable electric apparatus; or

(c) portable electric apparatus.

3.24 The employer must take reasonably practicable measures to ensure that any flexible cable or trailing cable used in or on a mine or works shall be screened either individually or collectively and such screens shall be earthed: Provided that a cable used in a hazardous area shall be screened individually.

3.25 The employer must take reasonably practicable measures to ensure that no flexible cable or trailing cable shall have more than fifteen joint repairs, including sheath patches over a length of 200 metres and no joint repair or patch shall be closer than 5 metres to an adjacent joint, repair or patch and no joint, repair or patch shall be closer than 3 metres to the cable plug or its terminal connection at the machine or apparatus.

3.26 The employer must take reasonably practicable measures to ensure that any cable reel used in connection with self-propelled mobile machine shall be provided with a device which shall interrupt the power supply to the cable before the complete cable is unreeled so that at least one complete turn of the cable shall remain on the reel when the interruption of the power supply has been effected, unless the machine's maximum range of travel is limited to less than that permitted by the cable on the reel for reasons other than the length of the cable.

3.27 The employer must take reasonably practicable measures to ensure that no electrical cable trench or duct is left open, uncovered or unprotected, except when persons are working in such trench or duct or where precautions have been taken to prevent persons from inadvertently falling into such trench or duct.

3.28 The employer must take reasonably practicable measures to ensure that persons are prevented from significant risks arising from inadvertent contact with overhead power lines by trackless mobile machines/ rail bound equipment or while erecting or moving structures or other objects.

3.29 The employer must take reasonably practicable measures to ensure that persons carrying out examinations, repairs or other work at elevated positions in close proximity to exposed electrical apparatus are protected from live electrical contact.

3.30 The employer must take reasonably practicable measures to ensure that surface residential and commercial buildings are to be wired and protected in accordance with South African Bureau of Standards Code of Practice SANS 10142-1, 2006, "Wiring of premises and installations not exceeding 1 kV". The normative references in SANS 10142-1, 2006 are not applicable to the employer.

3.31 The employer must take reasonably practicable measures to ensure that the design and construction of overhead power lines are in accordance with South African Bureau of Standards Code of Practice SANS 10280, 1995. "Overhead power lines for conditions prevailing in South Africa". The normative references in SANS 10280, 1995 are not applicable to the employer.

3.32 The employer must take reasonably practicable measures to ensure that electrical security fencing is erected and maintained in accordance with the South African Bureau of Standards Code of Practice SANS 10222 : 2002, Part 3, "Electrical Security Fences (non lethal)". The normative references of SANS 10222, 2002 are not applicable to the employer.

3.33 The employer must take reasonably practicable measures to ensure that any helmet light assemblies used underground at a mine complies with SANS 1438, 2013 "Helmet light assemblies for miners". The normative references of SANS 1438, 2013 are not applicable to the employer.

3.34 The employer must take reasonably practicable measures to ensure that any helmet light assemblies used underground are tested in accordance with the requirements of ARP 0108:2013.

3.35 The employer must take reasonably practicable measures to ensure that the operating voltage of any portable lamp used at a mine does not exceed 32 volts.

3.36 The employer must take reasonably practicable measures to ensure that all electric apparatus are selected, installed, worked and maintained in such a manner as not to constitute a hazard and shall be placed and protected in such a manner that no person can be injured by inadvertent contact with any live portion.

3.37 The employer must take reasonably practicable measures to ensure that all electric apparatus used in a hazardous area shall be explosion protected and certified as such by an inspection authority (Ia) certificate issued by an accredited test laboratory.

3.38 The employer must take reasonably practicable measures to ensure that any type and design of explosion protected apparatus shall at all times be identified in an inspection authority (Ia) certificate and an identification number shall be allocated to such apparatus by the accredited test laboratory.

3.39 The employer must take reasonably practicable measures to ensure that explosion protected apparatus is not used at a mine unless the manager is in possession of a copy of the inspection authority certificate. The identification number referred to in regulation 3.36 must be clearly and indelibly marked on the apparatus or on a metal plate (other than a light metal) permanently fixed to the apparatus.

(Chapter 3 inserted by Government Notice R332 in Government Gazette 38708 dated 24 April 2015)

CHAPTER 4
EXPLOSIVES

Definitions

In this chapter, unless the context otherwise indicates –

"blasting" means the initiation of explosives for the purposes of fragmenting of rock or ore body;

"explosive" means –

(a) a substance, or a mixture of substances, in a solid or liquid state, which is capable of producing an explosion;

(b) a pyrotechnic substance in a solid or liquid state, or a mixture of such substances, designed to produce an effect by heat, light, sound, gas or smoke, or a combination of these, as the result of non-detonative self-sustaining exothermic chemical reaction, including pyrotechnic substances which do not evolve gases;

(c) any article or device containing one or more substances contemplated in paragraph (a); or

(d) any other substance or article which the relevant Minister may from time to time by notice in the Gazette declare to be an explosive in terms of the Explosives Act, Act No 15 of 2003;

"hot holes" means shot holes which after being drilled has an ambient temperature increase of 3 degrees Celsius;

"initiate" means the action or intended action of setting off explosives;

"manufacture" means the making or processing of any explosive;

"misfire" means any explosives which have failed to explode after initiation;

"misfired hole" means a shot hole or part of a shot hole in which any explosives or any portion thereof has failed to explode after initiation;

"old explosives" means any explosives that have been used or damaged in any way, or have deteriorated due to exposure to water or the surrounding atmosphere or which have expired; and includes explosives recovered from misfired holes;

"ore-body" means any natural in-situ rock that contains any form of mineral;

"permitted explosives" means explosives classified as such by the Chief Inspector of Explosives (as defined in the Explosives Act, Act No 15 of 2003);

"primary blasting" means all blasting other than secondary blasting;

"primer" means an explosive cartridge or booster into which a detonator or detonating fuse has been inserted or connected;

"pumpable explosive" means:

(1) a mixture of ammonium nitrate, with or without other inorganic nitrates, with combustible substances which are not, classified as UN Number 0082, Class 1.1D; or

(2) a mixture of ammonium nitrate, with or without other organic nitrates, partially or wholly dissolved in water and with the addition of any of the following:

(i) ammonium nitrate emulsions, gels and suspensions, intermediate for blasting, classified as UN Number 3375;

(ii) combustible substances which are not explosive; or

(iii) substances which control the density of the final mix, either by chemical reaction or mechanically, and the final mix is classified as UN Number 0241, Class 1.1D;

or any form of explosive which is inserted in a hole by means of pumping;

"secondary blasting" means blasting for the purposes of removing obstructions, reducing rocks in size or making the workings safe;

"shot hole" means any drill hole charged with or intended to be charged with explosives;

"sleep-over blast" means any shot hole charged with explosives but not initiated in the same shift during which it was charged with explosives;

"socket" means any shot hole, or part of any shot hole, known not to be a misfired hole, which remains after having been charged with explosives and blasted or which, for any other reason, may be suspected of having contained explosives at any time and includes any shot hole, or part of any shot hole, from which all explosives have been extracted;

"stemming" means filling in shot holes with inert material; and

"tamping" means the consolidation of stemming and blasting materials in a shot hole.

Security in respect of explosives

4.1(1) The employer must take reasonably practicable measures to prevent persons not authorised by the employer from –

(a) gaining access to explosives;

(b) being in possession of explosives, or

(c) removing or attempting to remove explosives from a mine.

4.1(2) Only persons authorised by the employer may –

(a) gain access to or attempt to gain access to explosives;

(b) be in possession of explosives, or

(c) remove or attempt to remove explosives from a mine.

4.1(3) Subject to regulation 4.2(2), no person may, or cause or permit any other person to bury, hide, submerge or abandon any explosives.

Receipt, storage, issuing and transportation of explosives

4.2(1) The employer must ensure that:

(a) explosives that are not being transported or prepared for use are stored in explosive stores, silos or containers which are securely locked or, as far as reasonably practicable, designed and located so as to facilitate the safe and secure receipt, storage and issuing of explosives by a person referred to in regulation 4.1(2);

(b) a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to prevent persons from being exposed to the significant risks associated with the receipt, storage, issuing and transportation, inadvertent initiation and the deterioration of explosives. This written procedure referred to in this sub-regulation must include the following:

Storage of explosives

(i) measures to ensure that every container used for the storage of explosives, including old explosives, is –

(a) of robust construction;

(b) provided with an effective lock and the key kept only by an authorised person referred to in regulation 4.1(2);

(c) clearly marked to indicate the type of explosives to be placed therein;

(d) of a capacity determined by the employer in consultation with the explosive manufacturer or supplier;

(e) spaced apart from any other container used for storage of explosives, at a distance determined by the employer after consultation with the explosive manufacturer or supplier;

(f) approved in writing for that purpose by the employer;

(ii) measures to ensure, at every mine where there is a significant risk of old explosives being present, that adequate storage facilities are provided for such old explosives;

(iii) no person must place, or cause or permit any other person to place any other materials or any implements or tools, in the explosives containers other than those necessary for the preparation of initiation systems or primers; and

(iv) measures to ensure that primers are kept separate from other explosives and stored in a container complying with regulation 4.2(1)(b)(i);

Issuing of explosives

(v) measures to ensure, as far as reasonable practicable, that the explosives that have been ordered or issued do not exceed the explosive storage capacity of the storage facility in which it is intended to store those explosives, either underground or on surface; and

Transportation of explosives

(vi) measures to ensure, as far as reasonably practicable, that explosives are only transported in vehicles, conveyances, unopened cases or locked containers approved in writing for that purpose by the employer.

4.2(2) The employer must take reasonable measures to ensure, when mine closure is intended, or when a mine is not being worked as contemplated in section 2(2), that the Principal Inspector of Mines and the Chief Inspector of Explosives (as defined in the Explosives Act, (Act No. 15 of 2003) are notified in writing as soon as reasonably practicable, if any explosives have been left behind in the mine, of –

(i) the type, quantities and location of such explosives; and

(ii) the measures taken to safeguard persons from any significant risk associated with such explosives.

Destruction of explosives

4.2(3) The employer must ensure that a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to ensure that explosives are destroyed safely and not re-used for any purpose. Such procedure must include measures to ensure that:

(i) only the competent person contemplated in regulation 4.4(1) destroys explosives;

(ii) in the case of underground coal mines, explosives must be destroyed only on surface;

(iv) the Chief Inspector of Explosives is informed in advance if more than 50kg of explosives are to be destroyed at any one time; and

(v) no person destroys explosives on surface within a horizontal distance of 150 metres of any public building, public thoroughfare, railway line, power line or any place where people congregate or any other structure, which it may be necessary to protect in order to prevent any significant risk, unless:

(a) a risk assessment has identified a lesser safe distance and any restrictions and conditions to be complied with;

(b) a copy of the risk assessment, restrictions and conditions contemplated in paragraph (a) have been provided for approval to the Principal Inspector of Mines;

(c) written permission has been granted by the Principal Inspector of Mines; and

(d) any restrictions and conditions determined by the Principal Inspector of Mines are complied with.

Approved explosives and the usage of explosives at mines

4.3(1) The employer must take reasonable measures to ensure that only explosives approved in writing by the employer are used at the mine.

4.3(2) The employer must take reasonable measures to ensure that explosives are used in accordance with a written procedure prepared and implemented for that purpose by the employer, after consultation with the explosive manufacturer or supplier. The written procedure must include the following:

(a) All explosives must be used in the same sequence as they are issued;

(b) Under no circumstances must any blasting cartridge be broken or cut or a wrapper round any blasting cartridge be interfered with, except when preparing the blasting cartridge for the insertion of a detonator or detonating fuse;

(c) The only primers that must be permitted to be prepared are primers that are required for immediate use;

(d) Where igniter cord is used, such an igniter cord must be laid as close as practicable to the face and not on, or in contact with timber or other combustible material or flammable substance not forming part of the explosives charges; and

(e) Where pumpable explosives are used, the pumpable explosives are only sensitised at a working place where explosive charges are being prepared prior to the pumpable explosives being pumped into a shot hole.

4.3(3) The employer must take reasonable measures to ensure, if explosives are manufactured at the mine, that:

(a) it is done in accordance with a written procedure prepared and implemented for that purpose after consultation with the explosive manufacturer or supplier; and

(b) all mobile and portable explosives manufacturing units at a mine are used, inspected, serviced and maintained in accordance with a written procedure prepared and implemented for that purpose after consultation with the explosives manufacturer or supplier.

4.3(4) The employer must take reasonable measures to ensure that explosive powered tools are issued, stored, used and maintained in accordance with a written procedure prepared and implemented for that purpose by the employer after consultation with the manufacturer or supplier of such explosive powered tools.

4.3(5) The employer must take reasonable measures to ensure, subject to regulation 4.3(3), that only permitted explosives are used in fiery mines.

4.3(6) The employer must take reasonable measures to ensure that a written procedure is prepared and implemented after consultation with the explosives manufacturer or supplier to prevent persons from being exposed to significant risks associated with the spillage of explosives.

Primary and Secondary blasting to be performed by a competent person

4.4(1) The employer must take reasonable measures to ensure, where primary or secondary blasting takes place, that a competent person is appointed in writing to –

(a) exercise control over all explosives to be used for blasting at those working places for which the competent person is responsible;

(b) prepare primers;

(c) examine any shot hole to be deepened to ensure it is safe to deepen;

(d) examine for and deal with misfires and sockets, in accordance with the written procedure prepared in terms of regulation 4.11;

(e) mark or indicate shot holes for drilling or to authorise the drilling of shot holes marked or indicated by another person authorised to do so by the employer, except where the shot holes were marked or indicated by means of electronic software system, including but not limited to Global Positioning System or Laser, the competent person must be required to over inspect and authorise the commencement of drilling of shot holes;

(f) exercise control over any manufacturing at the working places for which such competent person is responsible for, of pourable or pumpable explosives to be used;

(g) connect blasting rounds or circuits;

(h) charge shot holes with explosives or place explosive charges; and

(i) make safe all hot holes in terms of the written procedure contemplated in regulation 4.16(7).

Management and control over explosives

4.4(2) The employer must take reasonably practicable measures to ensure that the competent person referred to in regulation 4.4(1) reports to the employer, whenever explosives are delivered to the working place for which that competent person is in charge, whether or not the correct quantity of explosives was delivered.

Persons performing primary or secondary blasting may be assisted

4.4(3) The employer may appoint a competent person in writing to assist the competent person referred to in regulation 4.4(1) with the following activities:

(a) exercising control over those explosives to be used during the performance of the duties of the competent person referred to in regulation 4.4(1) as stipulated in paragraphs (b), (c), (d) and (e) below;

(b) the preparation of primers;

(c) the charging of shot holes with or the placing of explosive charges;

(d) the connecting of blasting rounds or circuits; and

(e) the handling and transport of explosives, initiation systems and accessories.

Certification of initiation apparatus and blasting systems

4.5(1) The employer must take reasonable measures to ensure that where initiation of explosives charges takes place by means of electricity –

(a) apparatus used for the initiation of electronic detonators complies with SANS 1717-1 (2006) ‘The design and approval of EED initiation systems for use in mining and civil

blasting' and SANS 551 (2010) 'Detonators, relays and initiating devices for commercial applications';

(b) apparatus used for the initiation of electric detonators complies with SANS 1717-2 (2006) 'The design and approval of EED initiation systems for use in mining and civil blasting' Part 2 "Electric Initiation System - Shot Exploder Based of SANS 1717';

(c) apparatus used for the initiation of detonators by means of a controlled blasting system complies with SANS 1717-3 (2007) "The design and approval of detonator initiation systems for use in mining and civil blasting Part 3 Controlled Blasting System";

(d) every shot exploder, initiator or electronic delay detonator system is tested and certified by a test laboratory accredited for this purpose by the government endorsed national accreditation body as contemplated in ARP 1717 (2010) "Guide to the regulatory requirements for the approval of detonators, initiators and initiation systems used in mining and civil blasting applications";

(e) every inherently safe apparatus used for the testing of a circuit containing an electric detonator, electric or electronic initiatorelectronic delay detonator or a similar device is tested and certified for that purpose by a test laboratory accredited for this purpose by the government endorsed national accreditation body approved by the approving authority as contemplated in ARP 1717; and

(f) the shot-firing apparatus is maintained in an efficient and safe working order. Each shot-exploder must be provided with a removable operating handle or key or with a locking arrangement to secure it against unauthorised use and must be marked with a serial number, and a record must be kept of all examinations and tests carried out on it.

4.5(2) The normative reference in the SANS standards in regulation 4.5(1) above are not applicable to the employer.

Precautionary measures before initiating explosive charges

4.6(1) The employer of every underground coal mine must take reasonable measures to ensure that the competent person referred to in regulation 4.4(1) does not initiate explosive charges in an underground coal mine unless the –

(a) coal to be blasted has two free faces;

(b) end of the shot hole is at least 150 millimetres short of the back of the cut providing the second of the two free faces; and

(c) portion of the shot hole between the explosive charge and the collar is completely filled with stemming and tamped, in accordance with regulation 4.14.

4.6(2) The employer of every underground coal mine must take reasonable measures to ensure that the competent person referred to in regulation 4.4(1) does not fire an explosive charge in an underground coal mine where the place where the explosive charge is to be fired is dry and dusty, unless –

(a) a permitted explosive is used; and

(b) the place of firing and all contiguous accessible place(s) within a radius of 20 metres from it at the time of firing have been wetted through watering or have been given effective treatment with incombustible dust, in all parts where dust is lodged, whether roof, floor or side.

4.6(3) The employer of every underground mine must take reasonable measures to ensure that:

(a) explosives are not brought to the working place where blasting is to be carried out unless the –

(i) drilling of shot holes have been completed;

(ii) shot holes are ready to be charged with explosives;

(iii) quantity of explosives do not exceed the estimated required quantity to be used for the blast;

(b) the competent person referred to in regulation 4.4(1) does not initiate any explosive charge unless:

(i) the shot hole between the explosive charge and the collar is completely filled with stemming material and tamped;

(ii) all persons have been removed from the working place where explosive charges are to be initiated;

(iii) all entrances to the working place(s) where explosive charges are to be initiated, or to places where the safety of person(s) may be endangered by such initiation, are effectively guarded so as to prevent inadvertent access to such place(s) while such explosive charges are being initiated;

(iv) such competent person, gives or causes to be given due warning in every direction and is satisfied that no person remains where they might be exposed to danger from the initiating of such explosive charges;

4.6(4) The employer of every underground mine must take reasonable measures to ensure that the competent person referred to in regulation 4.4(1) or any person authorised to do so by the employer does not initiate an explosive charge in any underground mine where a centralised blasting system is being used, unless all persons who may be endangered by such initiation of explosive charges have been moved to a safe area.

4.6(5) The employer of every surface mine must take reasonable measures to ensure that:

(a) no person remains or approaches, or is caused or permitted to remain or approach, within 15 metres of any shot hole being charged with explosives, unless such person is assisting in the charging up of shot holes with explosives;

(b) except with the written permission of the Principal Inspector of Mines explosives are not brought to the working place where blasting is to be carried out until the shot holes are ready to be charged with explosives and the quantity of explosives brought to the working place do not exceed the estimated required quantity;

(c) before the initiation of explosive charges, an adequate number of guards are stationed at a safe distance determined by a risk assessment to prevent persons accessing the blasting area and that the guards remain at the safe distance until the initiation of explosive charges is completed and the guards are recalled by the competent person referred to in regulation 4.4(1); and

(d) at least three minutes before an explosive charge is initiated, the competent person referred to in regulation 4.4(1) gives due warning of the initiation of explosive charges.

4.7 The employer must take reasonable measures to ensure that when blasting takes place, air and ground vibrations, shock waves and fly material are limited to such an extent and at such a distance from any building, public thoroughfare, railway, power line or any place where persons congregate to ensure that there is no significant risk to the health or safety of persons.

4.8 The employer must take reasonable measures to ensure that the stemming or tamping is not withdrawn from a shot hole that has been charged with explosives except when dealing with misfired holes in accordance with the provisions of regulation 4.11(5).

Precautions after charges have been initiated

4.9 The employer must take reasonable measures to ensure that after explosive charges have been initiated or misfired holes have been re-initiated, the competent person referred to in regulation 4.4(1) does not approach, or causes or permits any other person to approach, within the range of the exploding charges until such competent person is satisfied that all the explosive charges have exploded or until a period of 30 minutes has expired, after the initiation of the charges.

Precautions when initiating by means of electricity

4.10(1) The employer must take reasonable measures to ensure that, where initiating takes place by means of electricity, the competent person referred to in regulation 4.4(1), after such competent person has connected the blasting cable to the detonator wires of any explosive charge or charges and before such explosive charge or charges have been initiated, does not-

(a) remain or approach, or cause or permit any other person to remain or approach, within a distance where such person may be endangered by the initiating of such explosive charges, except for the purpose of examining the blasting circuit; and

(b) examine the blasting circuit, or cause or permit the blasting circuit to be examined, unless both leads are disconnected from any source of electricity, whether for initiating explosive charges or testing the blasting circuit.

4.10(2) The employer must, where initiation takes place by means of electricity, take reasonable measures to ensure that the competent person referred to in regulation 4.4(1) --

(a) only uses a blasting cable provided for that purpose and which is in good order and of sufficient length to ensure that the blasting cable cannot come into contact with any other cable or electrical apparatus;

(b) secures the initiating device of the blast in an adequate and reasonable manner so as to prevent unauthorised access or use of the blasting system;

(c) connects the blasting cable to the detonator wires of any explosive charge or charges or to the wires of the initiator or similar device only after completing all blasting precautions, other than those referred to in paragraphs (d), (e) and (g) of this regulation;

(d) does not apply any electrical test to the blasting circuit except through the blasting cable and from a place of safety;

(e) does not connect the blasting cable to the terminals of the initiating device until immediately before initiation of explosive charges or attempting to initiate the explosive charges;

(f) except in the case of a remotely operated centralised electric blasting system, immediately after initiating or attempting to initiate the explosive charges, disconnects both leads of the blasting cable from the initiating device and then –

(i) removes the operating handle or key of the initiating device; or

(ii) secures the locking arrangement of the initiating device and removes the key;

(g) in the case of a remotely operated centralised electric blasting system, does not connect the blasting cable to the terminals of the blasting box until immediately before leaving such competent person's working place at the end of the shift; and

(h) in the case of a remotely operated centralised electric blasting system, disconnects immediately at the commencement of the shift any blasting cable from the terminals of the blasting box;

4.10(3) The employer must take reasonable measures to ensure that, after the explosive charges have been initiated by means of electricity, the competent person referred to in regulation 4.4(1):

(a) carefully examines for misfired holes where the charges have been initiated, before permitting any person to work there;

(b) instructs any person engaged in clearing the broken rock, mineral or ground to report immediately to such competent person the finding of any wires that may lead to a misfired hole; and

(c) carefully traces any such wires to determine whether or not a misfired hole has occurred.

4.10(4) The employer must take reasonably practicable measures to ensure that where the initiation of explosives takes place by means of electricity and where there is a risk of an explosive charge being initiated by lightning, operations in connection with the preparation or initiation of explosive charges are not started or continued on the approach of or during a thunderstorm and that no person remains, or is caused or permitted by any other person to remain, within an area where any person may be injured by the accidental initiation of explosives.

Precautions for misfires, sockets and old explosives

4.11 The employer must take reasonable measures to ensure that a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to prevent persons from being exposed to the significant risk associated with misfires, sockets and old explosives. Such procedure must include measures to ensure that:

4.11(1) no person gains inadvertent access to any misfired hole which is not immediately dealt with, and which measures should include clearly marking the misfired hole or barricading it off and requiring reporting of the misfired hole to all subsequent shifts, at the start of each such shift, until the misfired hole has been dealt with;

4.11(2) in any shaft in the course of being sunk, in addition to the requirements of regulation 4.9:

(a) the competent person referred to in regulation 4.4(1) makes a sketch showing the position of every misfired hole and sockets;

(b) every sketch referred to in regulation 4.11(2) is kept at the mine for a period of at least seven days unless directed otherwise in writing by the Principal Inspector of Mines; and

(c) the washing or blowing over and the preparation of the sketch required in terms of regulation 4.11(2) is done at least once a day under the immediate supervision of the person authorised to do so by the employer, and that this authorised person ensures that the washing or blowing over has been effectively done and the sketch properly prepared by means of personal inspection;

4.11(3) explosives are only extracted from any misfired hole by a means determined for this purpose after consultation with the explosives manufacturer or supplier;

4.11(4) the person extracting explosives from a misfired hole:

(a) ensures as far as reasonably practicable that all the explosives in the misfired hole are extracted; and

(b) recovers all explosives that have been extracted from the misfired hole;

4.11(5) no person removes or causes any other person to remove the plugs that are used to plug sockets or misfired holes unless such plugs are removed by the competent person referred to in regulation 4.4(1) for the purpose of inspection or are removed at the end of the shift prior the initiating of explosive charges;

4.11(6) In all surface mines the competent person referred to in regulation 4.4(1):

(a) re-initiates the misfired hole; or

(b) drills or causes to be drilled in the presence of such competent person, a relieving hole not less than 150 millimetres deeper than the misfired hole and which relieving hole is parallel to and not nearer than one metre to the misfired hole and that such competent

person charges and initiates this relieving shot hole and recovers the explosives liberated from the misfired hole; or

(c) extracts the explosives from the misfired hole in accordance with the provisions of regulation 4.11(3).

4.11(7) in underground mines, except underground coal mines, the competent person referred to in regulation 4.4(1):

(a) examines every socket and misfired hole to ascertain its depth, direction and whether it contains any explosives, by a means determined by the employer after consultation with the explosives manufacturer or supplier; and

(b) extracts explosives from the misfired hole in accordance with the provisions of regulation 4.11(3) and plugs the socket with a plug supplied for that purpose by the employer; or

(c) re-primes and blasts; or

(d) charges up the misfired holes with explosives and initiates the explosive charges; or

(e) blasts the misfires at the end of the shift;

4.11(8) In underground coal mines the competent person referred to in regulation 4.4(1):

(a) where a misfired hole is in stone, extracts the explosives from the misfired hole in accordance with the provisions of regulation 4.11(3) and charges up the misfired holes with explosives and blasts the misfires before or at the end of the shift;

(b) where a misfired hole is in a coal, drills or causes to be drilled in the presence of such competent person, a relieving shot hole parallel to and not nearer than 300 millimetres to the misfired hole and that such competent person charges and initiates the explosives charge contained in the relieving shot hole before or at the end of the shift.

Precautionary measures for marking, drilling and blasting

4.12 The employer must take reasonable measures ensure *[sic]* that a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to prevent persons from being exposed to the significant risk associated with marking, drilling and blasting of shot holes. Such procedure must include measures to ensure that:

4.12(1) in underground mines:

(a) before the competent person referred to in regulation 4.4(1) points out or marks any shot hole for drilling, such competent person:

(i) removes or causes to be removed all loose or loosened rock, mineral or ground to a safe distance from the shot hole determined by a risk assessment; and

(ii) searches for any misfired hole or socket within a distance of at least two metres from the proposed position or mark.

(b) no person drills or causes or permits to be drilled any shot hole -

(i) unless the competent person referred to in regulation 4.4(1) has clearly marked the position and direction of the shot hole with paint or other suitably visible material, or, if such marking is impracticable, has pointed out the exact position and direction of the shot hole;

(ii) unless it is placed more than 150 millimeters *[sic]* from any socket and is drilled in such a direction that it will nowhere come nearer than 150 millimeters *[sic]* from any socket;

(iii) unless it is placed more than two metres from any misfire and is drilled in such a direction that it will nowhere come nearer than two metres from any misfired hole; and

(iv) if it deviates from the position and direction indicated as contemplated in paragraph (i) above;

(c) no person drills or causes or permits to be drilled any shot hole in any shaft, drive, crosscut, winze, raise, bord, stall or other similar confined space underground where there is known to be a misfired hole until the misfired hole has been dealt with in accordance with the provisions of regulation 4.11(3);

(d) no person deepens or causes or permits any other person to deepen any hole which has been left standing or which is not completed at the end of a shift, unless:

(i) it has not been charged with explosives and it has been clearly described by the competent person referred to in regulation 4.4(1) in charge of the shift leaving work to the competent person referred to in regulation 4.4(1) in charge of the shift about to commence; or

(ii) the competent person referred to in regulation 4.4(1) examines such hole and finds it not to contain any explosives, or causes this to be done.

4.12(2) in surface mines:

(a) before any competent person referred to in regulation 4.4(1) points out or marks any shot hole for drilling or authorises any other person to point out or mark the position and direction of any shot hole for drilling, such competent person searches for any misfired hole or socket within a distance of at least two metres from the proposed position or mark.

(b) no person drills or causes or permits to be drilled any shot hole in any surface mine where there is known to be a misfired hole unless the shot hole is so drilled that it will nowhere come nearer than two metres to the misfired hole or unless the misfired hole has been dealt with in accordance with the provisions of regulation 4.11(3).

(c) no person drills or causes or permits to be drilled any shot hole, unless:

(i) it is placed more than 150 millimetres from any socket and is drilled in such a direction that it will nowhere come nearer than 150 millimetres to any socket;

(ii) it is a shot hole that deviated from the position and direction indicated in paragraph (a) above; and

(iii) no person deepens or causes or permits any other person to deepen any shot hole that has been left standing or which has not been completed at the end of a shift, unless it has not been charged with explosives and has been clearly described by the competent person referred to in regulation 4.4(1) in charge of the shift leaving work to the competent person referred to in regulation 4.4(1) in charge of the shift about to commence.

Prevention of flammable gas and coal dust explosions

4.13 The employer of every underground mine must take reasonable measures to ensure that:

4.13(1) a blow out, ignition of flammable gas or initiation of a coal dust explosion does not occur due to the design and positioning of the shot holes or due to the type of explosives that are used;

4.13(2) initiating devices or systems used in blasting operations are designed not to cause a methane or coal dust explosion;

4.13(3) testing for flammable gas is done in accordance with a written procedure prepared and implemented for this purpose; and

4.13(4) no explosives are initiated where flammable gas or coal dust may be present in sufficient quantities to cause a flammable gas or coal dust explosion or to cause flammable gas to burn.

Shot holes to be stemmed and tamped

4.14 The employer must take reasonable measures to ensure that:

4.14(1) tamping of each shot hole is of a minimum length of 0.4m or a third of the length of the shot hole, whichever is the greater, to a maximum length equal to the burden used in the blast pattern; and

4.14(2) no explosives contained in a shot hole are initiated unless the portion of the shot hole between the explosives and the collar is stemmed and tamped by means of a material determined for that purpose by the employer after consultation with explosive manufacture or supplier.

Amount or mass of explosives in a shot hole

4.15 The employer must take reasonably practicable measures to ensure that the maximum amount or mass of explosives used per shot hole is according to the manufacturer's or supplier's recommendations.

General precautions

4.16 The employer must take reasonable measures to ensure that:

4.16(1) in any mine other than a coal mine, no explosive charges are initiated during the shift unless –

(a) such explosive charges are necessary for the purpose of secondary blasting or re-initiating the misfired holes in development faces;

(b) written permission for such initiation has been granted by a person authorised to do so by the employer; and

(c) reasonable precautions have been taken to prevent, as far as possible, any person from being exposed to smoke or fumes from such initiation of explosive charges;

4.16(2) no blasting operations are carried out within a horizontal distance of 500 metres of any public building, public thoroughfare, railway line, power line, any place where people congregate or any other structure, which it may be necessary to protect in order to prevent any significant risk, unless:

(a) a risk assessment has identified a lesser safe distance and any restrictions and conditions to be complied with;

(b) a copy of the risk assessment, restrictions and conditions contemplated, in paragraph (a) have been provided for approval to the Principal Inspector of Mines;

(c) shot holes written permission has been granted by the Principal Inspector of Mines; and

(d) any restrictions and conditions determined by the Principal inspector of Mines are complied with.

4.16(3) no person smokes, lights a fire or brings a naked light or flame, within a distance of 10 metres of where explosives are being loaded, transported, off loaded, handled or explosive charges are being prepared;

4.16(4) in any mine blasting take place only at a time determined in writing by the employer;

4.16(5) in surface mines, a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to prevent persons from being exposed to the significant risks associated with hot holes. Such procedure must include:

(a) where there is a significant risk of hot holes occurring, that the competent person referred to in regulation 4.4(1) measures the temperature of the *[sic]*; and

(b) that the temperatures of the shot holes are measured at any point throughout the length of the shot hole and recorded prior and during charging up operations.

4.16(6) a written procedure is prepared and implemented after consultation with explosives manufacturer or supplier to ensure that sleep-over blasts are carried out safely;

4.16(7) a written procedure is prepared and implemented, after consultation with the explosive manufacturer or supplier, to prevent persons from being exposed to significant risks associated with secondary blasting. The written procedure must include measures to ensure that:

(a) all persons are moved to a safe area prior to secondary blasting taking place;

(b) guards are placed at all entrances at a safe distance determined by a risk assessment, to the area where secondary blasting is to take place; and

(c) written permission from a person authorised by the employer to do so, is granted before secondary blasting is carried out.

4.16(8) the competent person referred to in regulation 4.4(1):

(a) takes all reasonable precautions to safeguard every person assisting such competent person in the preparation of explosive charges against an accident;

(b) only charges shot holes with explosives within a reasonable time of initiation and after all persons not required to assist in the charging have been removed to a safe distance determined by risk assessment;

(c) charges only the shot holes or prepare only the explosive charges that are intended to be initiated at the next blast and, while explosives charges are awaiting initiation, ensures that they are not interfered with;

(d) except as may be necessary to re-initiate a misfired hole, does not insert more than one detonator into an explosive charge, provided that in wet workings two detonators may be used only if they are both inserted into the same cartridge and securely fastened to it;

(e) only uses a means, appliance or material supplied by the employer for the purpose of initiating of explosive charges or testing of a blasting circuit; and

(f) before any charge is initiated, takes adequate measures to prevent injury to persons or damage to property caused by blasting operations.

4.17 No person:

4.17(1) may drill or blast any shot hole in a subterranean tunnel intended to be used for purposes other than extracting minerals, unless -

(a) a risk assessment has identified a lesser safe distance and any restrictions and conditions to be complied with;

(b) a copy of the risk assessment, restrictions and conditions contemplated, in paragraph (a) have been provided for approval to the Principal Inspector of Mines;

(c) written permission has been granted by the Principal Inspector of Mines; and

(d) any restrictions and conditions determined by the Principal Inspector of Mines are complied with;

4.17(2) may smoke, light a fire or bring a naked light or flame, within a distance of 10 metres of where explosives are being loaded, transported, off loaded, handled or explosive charges are being prepared;

4.17(3) who is engaged in handling explosives or who is travelling on a vehicle on which explosives are being transported may carry matches or any other means of producing a flame or a spark;

4.17(4) warned of the initiation of explosive charges as contemplated in regulation 4.6(5)(d) may remain in or enter the unsafe area surrounding the place where the initiation of explosives is to take place.

4.18 Every person must report, in a manner prescribed by the employer, without delay any case of gassing, however slight, to ensure that such case receives prompt medical attention.

(Chapter 4 inserted by Government Notice R1279 in Government Gazette 29458 dated 15 December 2006)

(Chapter 4 substituted by Government Notice R584 of 2015 with effect from 10 October 2015)

CHAPTER 5
FIRES AND EXPLOSIONS

Report to Employer

5.1(1) The employer must ensure that a competent person reports to the employer, at appropriate intervals determined in accordance with the mine's risk assessment, on -

(a) the effectiveness of the precautionary measures taken to prevent or suppress explosions of coal dust or flammable gas; and

(b) the adequacy of measures in place to prevent, detect and combat the start and spread of mine fires.

[Reference is made to the following Guidelines issued by the Chief Inspector of Mines in terms of section 9(2) of this Act

(i) Guideline for the Compilation of a Mandatory Code of Practice for the Prevention of Coal Dust and Flammable Gas Explosions: Ref.: DME 16/3/2/1-A1

(ii) Guideline for the Compilation of a Mandatory Code of Practice for the Prevention of Flammable Gas Explosions in Mines Other than Coal DME 16/3/2/1-A2]

(Regulation 5.1(1) inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

5.1(2) Where at any area at a mine, a fire could pose a significant risk to the health and safety of persons, the employer must take reasonable measures to ensure that flammable liquids, gases and materials in use, are transported, stored, deposited, used and disposed of in such a way as to prevent the starting or spreading of a fire.

5.1(3) The employer at any mine at which a fire occurs must, as soon as practicable, notify the employer of any other mine at which the spread of such fire could constitute a hazard should such fire not be immediately extinguishable, of the existence of that fire

5.1(4) The employer must take reasonably practicable measures to ensure that any coal, coal debris or bituminous rock is deposited so that it does not pose a significant risk to the health or safety of any person.

(Regulation 5.1(2), (3) and (4) inserted by the Schedule in Government Notice R1237 in Government Gazette 25404 dated 29 August 2003)

5.1(5) The employer, at any mine where the risk assessment indicates a risk of the presence of flammable gas, must ensure- that all flammable gas measuring instruments and flammable gas warning devices used at the mine for the detection of methane or hydrogen or a mixture of both, comply with the South African National Standard Specification SANS 151 5-1 : 2006, Edition 2.1 "Gas measuring equipment primarily for use in mines: Part 1: Battery operated portable, flammable gas measuring instruments and warning devices".

(Regulation 5.1(5) inserted by Government Notice R92 in Government Gazette 30698 dated 1 February 2008)

5.1(6) Annex A: "Assessment of Compliance with this part of the Specification" contained in South African National Standard Specification SANS 1515-1:2006, Edition 2.1 shall, for the purpose of regulation 5.1(5), be deemed to be normative.

(Regulation 5.1(6) inserted by Government Notice R92 in Government Gazette 30698 dated 1 February 2008)

CHAPTER 6
HEALTH AND SAFETY REPRESENTATIVES AND COMMITTEES

[An italicised word or phrase is defined in section 102 of *this* Act and such word or phrase in bold is defined in Chapter 20 of these regulations.]

[Unless otherwise indicated all references to sections are references to sections of *this* Act.]

Prescribed period for negotiations and consultations

6.1(1) The owner of a mine required to enter into negotiations in terms of sections 26(1) and 33(1), must commence negotiations within one month of the obligation to do so arising.

[6.1(1)-The obligation to negotiate arises when there is a representative trade union at a mine and when there are 20 or more, or 100 or more, employees at the mine in the case of sections 26(1) and 33(1), as the case may be.]

[6.1(1) In terms of section 33(8) the negotiations and consultations contemplated in section 26(1) and 33(1) may be held at the same time.]

6.1(2) The manager of a mine required to enter into consultations in terms of section 26(6) or (7) and 33(6) or (7), must commence consultations within one month of the obligations to do so arising.

6.1(3) If no collective agreement is concluded on the number of full-time health and safety representatives within three months of negotiations commencing in terms of regulation 6.1 (1), any party to a dispute in terms of section 26(8)(a) may refer the dispute to the Commission.

6.1(4) If no agreement is concluded on the number of full-time health and safety representatives within three months of consultations commencing in terms of regulation 6.1(2), any party to a dispute in terms of section 26(8)(b) may refer the dispute to the Commission.

Application of regulations

6.2 If a collective agreement dealing with the election of health and safety representatives, full-time health and safety representatives or employee representatives on health and safety committees is concluded in terms of Chapter 3 of this Act, the regulations in this Chapter dealing with such election do not apply.

[6.2-Section 33(4) authorises this regulation.]

Establishment of election committee

6.3(1) The manager must establish an election committee.

6.3(2) The election committee-

(a) must include an appropriate number of employee representatives; and

(b) may include a number of management representatives.

6.3(3) If the election committee includes management representatives, their number must be equal to or less than the number of employee representatives.

6.3(4) The employee representatives on the election committee must be appointed-

(a) by the representative trade union at the mine;

(b) if there is no representative trade union at the mine, by the registered trade unions with members at the mine; or

(c) if there is no registered trade union with members at the mine, by the employees at the mine.

Duties of election committee

6.4 The election committee must-

(a) determine fair and reasonable procedures for the nomination and election of health and safety representatives,

(b) ensure that elections are conducted in terms of such procedures;

(c) appoint an election officer and one or more counting officers for each election; and

(d) after consulting the manager, determine the date, time and place of each election.

Duties of manager

6.5(1) The manager must-

(a) as far as practicable, ensure that every employee is made familiar with the nomination and election procedures;

(b) give reasonable and understandable notice to the employees of the date, time and place of each election;

(c) provide the facilities and assistance reasonably necessary for the election committee to perform its functions;

(d) provide the facilities reasonably necessary for-

(i) the election of health and safety representatives, and

(ii) the appointment of employee representatives on any health and safety committee, and

(e) provide reasonable time off from work, without loss of remuneration, for employees to participate in the elections of health and safety representatives.

6.5(2) The Chief Inspector may issue guidelines regarding the facilities and assistance to be provided in terms of regulation 6.5(1).

Nomination of health and safety representatives

6.6(1) Every candidate for election as a health and safety representative for a shift and designated working place, must be nominated for election by an employee who works on the same shift at the designated working place.

[6.6(1)-Section 28(1) prescribes the qualifications of health and safety representatives.]

6.6(2) Every candidate for election as full-time health and safety representative for a mine must be nominated for election by an employee.

[6.6.(2)-Section 28(2) prescribes the qualifications of full-time health and safety representatives.]

Procedures for the election of health and safety representatives

6.7(1)

(a) If only one candidate is nominated for election as a health and safety representative for a shift at a designated working place, the election officer must declare the candidate elected.

(b) If two or more candidates are nominated for election as a health and safety representative for a shift at a designated working place, the election officer must hold an election.

6.7(2) Every election for a health and safety representative-

(a) must be under the control of the election officer; and

(b) is only valid if 50% or more of the employees who work on the same shift at the designated working place concerned vote in the election.

6.7(3)

(a) If less than 50% of the employees who work on the same shift at the designated working place concerned vote in an election, the election officer must, after consulting the manager, determine a date, time and place for a subsequent election.

(b) Regulation 6.7(2)(b) does not apply to such subsequent election.

6.7(4) Every employee on a shift at a designated working place has one vote in the election of every health and safety representative for that shift and designated working place.

6.7(5) The counting officers must, under the supervision of the election officer, count all valid votes.

6.7(6) The election officer must announce the results of the count to the employees concerned.

6.7(7) If an election for an alternate health and safety representative is held, it must be conducted in the same manner as an election for a health and safety representative.

Procedures for the election of full-time health and safety representatives

6.8(1) If the number of candidates nominated for election as full-time health and safety representatives at a mine is-

(a) not more than the number that must be elected, the election officer must declare the candidates elected; or

(b) more than the number that must be elected, the election officer must hold and *[sic]* election.

6.8(2) Every election for a full-time health and safety representative-

(a) must be under the control of the election officer; and

(b) is only valid if 50% or more of the employees vote in the election.

6.8(3)

(a) If less than 50% of the employees vote in an election, the election officer must after consulting the manager, determine a date, time and place for a subsequent election.

(b) Regulation 6.8(2)(b) does not apply to the subsequent election.

6.8(4) Every employee has one vote in the election of every full-time health and safety representative.

6.8(5) The counting officers must, under the supervision of the election officer, count all valid votes.

6.8(6) The election officer must announce the results of the count to the employees.

Appointment of health and safety representatives

6.9 The manager must-

(a) within 7 days of election, appoint in writing every employee elected as a health and safety representative;

(b) provide every health and safety representative with suitable means of identification as a health and safety representative, and

(c) prominently and conspicuously display the photograph and name of the health and safety representative at an appropriate place at the mine.

Appointment of employee representatives on health and safety committee

6.10 Every employee representative on a health and safety committee at a mine must be appointed by a majority of the health and safety representatives at the mine.

[6.10-Section 34(4) requires the employee representatives on health and safety committees to be appointed by the health and safety representatives.]

Period of office

6.11(1) The period of office of any health and safety representative or employee representative on a health and safety committee is three years.

6.11(2) Despite regulation 6.11(1) the health and safety committee may determine shorter periods of office for-

(a) health and safety representatives;

(b) full-time health and safety representatives; and

(c) employee representatives on a health and safety committee.

6.11(3) Every health and safety representative and employee representative on a health and safety committee may be reappointed in accordance with the provisions of these regulations after the expiry of their periods of office.

Vacation of office and filling of vacancies

6.12(1) A health and safety representative must vacate office on expiry of that representative's period of office or if-

(a) the representative-

(i) no longer satisfies the qualifications contemplated in section 28(1); or

(ii) resigns as a health and safety representative; or

(b) so required in writing on the grounds that the representative has not properly performed the functions of a health and safety representative by-

(i) at least 50% of the employee representatives on the health and safety committee; or

(ii) at least 50% of the employees who work on the same shift at the designated working place as the health and safety representative.

6.12(2) A full-time health and safety representative must vacate office on expiry of that representative's period of office or if-

(a) the representative-

(i) no longer satisfies the qualifications contemplated in section 28(2); or

(ii) resigns as full-time health and safety representative; or

(b) so required in writing on the grounds that the representative has not properly performed the functions of a full-time health and safety representative by-

(i) at least 50% of the employee representatives on the health and safety committee; or

(ii) at least 50% of the employees.

6.12(3) The manager must within 7 days from the time when a health and safety representative must vacate office in terms of regulation 6.12(1) or (2), terminate the health and safety representative's appointment and in writing notify the health and safety representative of it.

6.12(4) A vacancy contemplated in regulation 6.12(1) or (2) must be filled by a health and safety representative elected in a by-election held in terms of regulation 6.7 or 6.8, as the case may be.

6.12(5) An employee representative on a health and safety committee must vacate office on the committee on expiry of such representative's period of office of it *[sic]* that representative-

(a) is removed from office by a majority vote of employee representatives on the health and safety committee on grounds that the representative has not properly performed the functions of an employee representative on the health and safety committee; or

(b) resigns as employee representative on the health and safety committee.

6.12(6) A vacancy contemplated in regulation 6.12(5) must be filled by an employee appointed in terms of regulation 6.10.

(Chapter 6 substituted by regulation 2 of Government Notice R846 in Government Gazette 18078 dated 21 June 1997)

CHAPTER 7
INSPECTORATE OF MINE HEALTH AND SAFETY

Qualifications of inspectors

7.1 An officer must comply with the appointment requirements of the Personnel Administration Standard for the Occupational Class: Inspector: Mines or the Occupational Class: Inspector: Mining Machinery approved by the Public Service Commission read in conjunction with Public Service Staff Code K.II/I to be appointed as an inspector on the establishment of the Mine Health and Safety Inspectorate.

Authorisation certificate

7.2(1)

(a) The Chief Inspector must issue each inspector appointed in terms of section 49(1) with a certificate DME 34 signed by the Chief Inspector.

(b) The certificate which must include the names, identification number and a photograph of the inspector, must indicate-

(i) the position in which the inspector is employed; and

(ii) that the inspector may, in terms of section 50(1), enter any mine for the purposes of monitoring or enforcing compliance with this Act.

[7.2(1)-Section 49(2) requires the Chief Inspector to issue a prescribed certificate to each inspector.]

7.2(2)

(a) The Chief Inspector must issue each person authorised under section 49(4)(b) with a letter of authorisation and a certificate DME 35 signed by the Chief Inspector.

(b) The letter of authorisation must include-

(i) the names of the person;

(ii) the functions to be performed by the person;

(iii) the area in which the functions will be performed; and

(iv) the period for which the person is authorised.

(c) The certificate, which must include the names, identification number and a photograph of the authorised person, must indicate that the person-

(i) is appointed to perform the functions of an inspector as indicated in the letter of authorisation; and

(ii) may, in terms of section 50, enter any mine to perform such functions.

[7.2(2)-Section 49(5) requires the Chief Inspector to issue a prescribed certificate to each person authorised to perform the functions of an inspector.]

7.2(3) Every inspector appointed or person authorised under section 49(1) or 49(4) as the case may be, must at all times when entering, or performing any function at any mine-

(a) carry on their person, certificates DME 34 or 35 and the letter of authorisation issued in terms of regulation 7.2(2), as the case may be; and

(b) must show such certificate and letter to the manager of the mine or the person in charge of any working place at the mine, if requested to do so.

7.2(4)

(a) Despite regulations 7.2(1) to (3) the Principal Inspector of Mines may issue a letter, signed by the Principal Inspector of Mines to any inspector appointed or person authorised under section 49(1) or 49(4), as the case may be, who for any reason is not in possession of a certificate DME 34 or 35.

(b) The letter issued under regulation 7.2(4)(a) must include the names of the inspector or person and the official stamp of the office of the Principal Inspector of Mines and must state that the inspector or person is duly appointed or authorised under section 49(1) or 49(4), as the case may be.

(c) Regulation 7.2(3) is applicable to a letter issued under regulation 7.2(4).

7.2(5) A certificate DME 34 of *[sic]* 35 or a letter contemplated in regulation 7.2(4) is deemed to be adequate proof of an appointment or authorisation under section 49(1) or 49(4), as the case may be.

(Chapter 7 substituted by regulation 3 of Government Notice R846 in Government Gazette 18078 dated 21 June 1997)

CHAPTER 8
MACHINERY AND EQUIPMENT

Air Compressors

8.1(1) The employer must ensure, in the case of air compressors with a free delivery in excess of 0,15 cubic metres per second and where compression takes place in the presence of lubricating oil, that the compressor is fitted with automatic means of limiting the operating temperature and pressure of the compressor to a safe level.

(Regulation 8.1 inserted by Government Notice R1579 in Government Gazette 24168 dated 13 December 2002)

Underground Railbound Transport

8.2 The employer must take reasonable measures to ensure that:

8.2(1) the ***braking system*** of every ***locomotive*** or ***train*** is capable of stopping the ***locomotive*** or ***train*** within a safe distance under all operating conditions;

8.2(2) the ***braking system*** of every ***locomotive*** has passed a ***dynamic type test*** under full load conditions, before being used for the first time and after any brake design modifications;

8.2(3) the ***braking system*** of every ***locomotive*** has passed a ***static test*** before the ***locomotive*** is put into use at the commencement of each shift, after repairs and after adjustments;

8.2(4) a system is in place to alert persons to the presence and direction of travel of any ***locomotive*** or ***train***,

8.2(5) a system is in place to assist the driver or operator of a ***locomotive*** or ***train*** to travel at a safe speed;

8.2(6) any ***rolling stock*** used for the transportation of persons is approved, by a competent person and is operated and maintained safely;

8.2(7) a system is in place that is capable of preventing any ***locomotive*** or ***train*** from inadvertently being set in motion.

8.3 No person may board or alight from a ***locomotive*** or ***train*** while it is in motion.

REPEALS

The following regulations made under the Minerals Act, in force in terms of item 4 of Schedule 4 of the Act, are hereby repealed

18.1.1	18.1.6	18.4.2.1	18.8.3
18.1.2	18.1.6(a)	18.4.2.2	18.8.4.1
18.1.2(a)	18.1.6(b)	18.6.1	18.8.5
18.1.2(b)	18.2.2.1	18.6.2	18.8.6
18.1.2(c)	18.2.2.1(a)	18.7.1	18.8.7.1
18.1.2(d)	18.2.2.1(b)	18.7.2	18.8.7.1(a)
18.1.2(d)(i)	18.2.2.2	18.7.2(a)	18.8.7.1(b)
18.1.2(d)(ii)	18.3.3	18.7.2(b)	18.8.7.2
18.1.2(d)(iii)	18.3.4	18.7.2(c)	18.8.7.3
18.1.3	18.4.1.1	18.7.2(d)	
18.1.4	18.4.1.2	18.7.2(e)	
18.1.5	18.4.1.3	18.7.2(f)	

*(Regulations 8.2 and 8.3 inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004. **Publishers note:** The notice states the following: "The regulations in the Schedule shall not be applicable to underground endless rope haulage installations, monorail installations, chairlift installations, overhead cranes and crawls, railbound equipment used in shafts, winders and raises, lifting machines, stackers and reclaimers.")*

Scraper Winch and Mono-Rope installation

8.4(1) The employer, at every mine where scraper-winches or mono-rope winches are operated, must take reasonable measures to prevent persons from being injured as a result of-

(a) any person coming into contact with any moving part of a scraper winch or mono-rope winch installation or any equipment attached thereto; and

(b) the scraper winch or mono-rope winch installation being unsafe.

8.4(2) The measures to be taken by the employer in terms of regulation 8.4(1) must include measures to ensure that-

(a) scraper-winches and mono-rope winches are only operated by competent persons authorized by the employer to do so;

(b) the scraper winch or mono-rope winch is not operated until it is examined and declared safe to operate by a person authorised to do so by the employer;

(c) means are provided to forewarn persons of the intention to commence operating any scraper-winch or mono-rope winch;

(d) means are provided for persons to signal to the operator, from any access point to the installation, to shut down the operation of the scraper-winch or mono-rope winch installation;

(e) scraper winch and mono-rope winch ropes, scraper attachments and rope splicing are regularly inspected;

(f) the scraper winch ropes are always underlay;

(g) a written procedure is prepared and implemented for the installation of the winch system, covering at least-

(i) the requirements of scraper and mono-winch foundations and installations;

(ii) the crossover and anti-fouling arrangements of ropes from two or more winches;

(iii) illumination of the moving parts of any winch so that they can be identified by persons;

(iv) appropriate sheave and return pulley anchor and rigging arrangements, including the use of safety slings;

(v) measures to ensure that winch ropes are used within the design capacity;

(vi) winch starter box location to ensure ease of operation by the operator; and

(vii) the moving and transport of winches from one location to another.

(Regulation 8.4 inserted by Government Notice R1225 in Government Gazette 28333 dated 15 December 2005)

Lifting Equipment Regulations

Definitions

For purposes of regulation 8.5, unless the context otherwise indicates -

"**Lifting equipment,**" means any equipment or machine or arrangement of equipment or machines intended or used for the lifting, lowering, suspension, or moving in suspension of any person or load.

"**Lifting tackle,**" means any attachment, including anchoring points, used to secure lifting equipment or a load to lifting equipment.

8.5(1) The employer must take reasonable measures to ensure that no person is injured due to the failure of any lifting equipment or lifting tackle as a result of-

(a) incorrect design for the intended application;

(b) incorrect installation; or

(c) insufficient maintenance.

8.5(2) The employer must take reasonable measures to ensure that the installation, use (including the transport of persons), maintenance, inspection, testing and keeping of records of lifting equipment and lifting tackle are done in accordance with a written operating procedure prepared and implemented for that purpose.

8.5(3) The employer must take reasonably practicable measures to ensure that -

(a) only lifting equipment and lifting tackle with a minimum factor of safety of four (4) is used;

(b) lifting equipment and lifting tackle are not used beyond their design capacity; and

(c) the safe working load of any lifting equipment and lifting tackle is conspicuously and clearly marked or indicated thereon.

8.5(4) Notwithstanding regulation 8.5(2), the employer must take reasonably practicable measures to ensure that the following lifting tackle has a minimum factor of safety of-

(a) ten (10) for natural fiber ropes;

(b) six (6) for steel wire ropes, man-made fiber ropes and textile webbing; and

(c) four (4) for high tensile steel chains.

8.5(5) The employer must take reasonable measures to ensure that only persons authorised in writing by the employer to do so, operate lifting equipment and lifting tackle.

8.5(6) The employer must take reasonably practicable measures to ensure that the lifting equipment used at the mine is designed and manufactured in accordance with an appropriate standard.

(Regulation 8.5(6) amended by GNR 90 in Government Gazette 30698 dated 1 February 2008)

8.5(7) The following regulations promulgated under Minerals Act, 1991 (Act No. 50 of 1991) in force in terms of item 4 of Schedule 4 of the Act, are hereby repealed-

Chapter 6	**Chapter 16**	**Chapter 19**
6.1.1	16.98	19.1
6.1.2	16.98.1	19.2.1
6.1.3	16.98.2	19.2.2
6.2.1	16.98.3	19.3.1
6.2.2	16.98.4	19.3.2
6.2.3	16.98.5	19.3.3
6.2.4	16.99	19.3.4
6.2.5	16.100	19.4
6.3.1	16.101	19.5
6.3.2	16.102	19.6
6.3.2.1	16.103	
6.3.2.6	16.103.1	
6.3.2.7	16.103.2	
6.3.2.8	16.104	
6.3.2.12		
6.3.3.1		
6.3.3.2		
6.3.3.3		
6.3.3.4		
6.3.3.5		
6.3.3.6		

6.9		
6.11		

(Regulation 8.5(7) deleted and substituted by GNR 90 in Government Gazette 30698 dated 1 February 2008)

(Regulation 8.5 inserted by Government Notice R1225 in Government Gazette 28333 dated 15 December 2005)

Fans

Definitions

For purposes of regulation 8.6, unless the context otherwise indicates -

"**booster fan**" means a fan installed underground in the main air stream or in a split of the main air stream to assist the main fan to increase airflow and/or overcome resistance through a section of a mine.

"**main fan**" means a fan that controls the entire air flow of a mine, or the airflow of one or more of the major air circuits.

8.6(1) The employer must take reasonable measures to ensure that combustible materials, explosives or natural vegetation are not located so near to fan installations and its switch-gear used for underground ventilation, that if such combustible materials, explosives or natural vegetation catch fire, there is a significant risk to the supply of clean air to any underground working place as a result of-

(a) the fan installation or its switch-gear being damaged; or

(b) smoke or fumes being drawn into any working place.

8.6(2) The employer must ensure, where a significant risk of an explosion of flammable gas or coal dust exists, that measures are in place to ensure that there is always a supply of clean air to all underground working places. Such measures must include:

(a) installing the main fan on surface;

(b) providing an effective means of protecting the main fan against damage caused by explosion;

(c) ensuring the main fan is readily accessible to effect emergency repairs; and

(d) having a back up system in place to provide clean air should the main fan become inoperative.

8.6(3) The employer must ensure, as far as reasonably practicable, that every main fan is provided with:

(a) an automatic means of alerting a responsible person should it stop or cease to operate;

(b) an effective means of giving early warning of defective operation;

(c) a power supply from two different sources or networks, which can include an emergency supply alternator / generator, for power supply in the event of an interruption to the normal power supply; and

(d) an effective means for safe entrance to and exit (escape) from the main fan housing.

8.6(4) The employer must take reasonable measures to ensure that a competent person examines every main and booster fan for effective operation, internally and externally, together with all appurtenant components that are necessary for the operation of the fan, at intervals not exceeding three months, or any other lesser interval determined by the mine's hazard identification and risk assessment in terms of section 11.

8.6(5) The employer must keep records of all examinations conducted in terms of regulation 8.6(4), including remedial measures taken, for a period of at least the most recent ten years of the fan installation.

8.6(6) The employer must take reasonable measures to ensure that all main and booster fans are installed, operated and maintained in accordance with a written procedure prepared and implemented for that purpose.

(Regulation 8.6 inserted by the Schedule in Government Notice 911 in Government Gazette 29214 dated 8 September 2006)

Refrigeration and Air-conditioning Installations

8.7(1) The employer must take reasonable measures to ensure that all refrigeration or air-conditioning installations at the mine comply with the requirements of the South African Bureau of Standards Code of Practice - SANS 10147, "Refrigerating systems including plants associated with air-condition systems" (2002: 4th ed) with respect to its safety, construction, erection, operation, inspection and testing.

8.7(2) The employer must take reasonable measures to ensure that a competent person examines and operationally tests the entire refrigeration system as contemplated in SANS 10147, excluding pressure relief devices, at least once every 3 (three) months.

8.7(3) Regulation 8.7(1) and 8.7(2) do not apply to any;

(a) household refrigerator;

(b) water cooler or similar equipment that contains less than 1 kg of refrigerant;

(c) unit type display counter or any commercial refrigerator that contains less than 15 kg of a group 1 refrigerant; and

(d) refrigeration plant that requires a prime mover of less than 10 kW or less.

8.7(4) Despite Regulation 8.7(3) the clauses in SANS 10147 that refer to the Montreal Protocol apply to all air-conditioning and refrigeration equipment.

8.7(5) The normative references in the above standard of SANS 10147 are not applicable to the employer.

Repeal

8.7(6) The following regulations made under the Minerals Act, 1991(Act No. 50 of 1991) in force in terms of Schedule 4 of the Act are hereby repealed-

Chapter 10	**Chapter 23**
10.13	23.15.1
10.13.1	23.15.2
10.13.2	23.15.3
10.13.3	23.15.4
10.13.4	23.15.5
10.14	23.15.6
10.14.1	23.15.7
10.14.2	23.15.8
10.14.3	23.15.9
	23.15.11
	23.15.12
	23.15.13
	23.15.14
	23.15.15
	23.15.16

(Regulation 8.7 inserted by the Schedule in Government Notice 911 in Government Gazette 29214 dated 8 September 2006)

General Machinery Regulations

8.8(1) The employer must take reasonably practicable measures to prevent persons from being injured as a result of them, the clothes being worn by them or any equipment being held by them coming into contact with or being drawn into any moving part of any machine.

8.8(2) The employer must take reasonably practicable measures to prevent persons from being injured because of any machinery failing as a result of-

(a) incorrect design;

(b) incorrect installation;

(c) poor maintenance; or

(d) incorrect use or non-compliance with proper operating or safety procedures.

8.8(3) The measures to be taken by the employer in terms of regulation 1 must include measures to ensure that-

(a) only persons authorized by the employer to do so, start operate and maintain any machine where such starting, operation or maintenance may pose a significant risk to any person;

(b) where the moving of machinery may pose a significant risk to any person, such machinery is only moved under the constant supervision of a competent person who is fully aware of the risks attached to such moving of the machinery;

(c) only persons authorised by the employer to do so enter any area where machinery is operated, where such operation may pose a significant risk to any person;

(d) machinery is only operated if all installed safety devices are operational and functional;

(e) persons in close proximity to moving parts of machinery do not wear or are not permitted to wear clothing or anything else that can be caught in such moving parts;

(f) where the unexpected moving of any machinery or any part of any machinery could pose a significant risk to any person, appropriate prestart warning devices, such as audible warning devices, the delay time must be determined by risk assessment with a minimum of a ten second time delay, are fitted to such machinery and used to warn persons that such machinery is about to be set in motion;

(g) here there could be a significant risk to any person working on any machinery due to the release from such machine of any mechanical, electrical, hydraulic, chemical or other source of energy, a written lockout procedure is prepared and implemented to ensure that such source of energy is effectively locked out and de-energised before any person works on such machinery;

(h) access scaffolding is erected, used, maintained and dismantled safely and in accordance with SANS Standard 10085-1:2004 "The design, erection, use and inspection of access scaffolding".

(i) means are provided, on or in close proximity to any machine, to immediately remove the source of power to that machine in case of an emergency;

(j) where the starting of machines are interlocked, no unintended starting of any of those machines can take place;

(k) starting devices are so arranged that no accidental starting of machinery can take place; and

(l) all electrical, pneumatic and hydraulic portable equipment are operated and maintained in a safe working order;

8.8(4) The measures to be taken by the employer to prevent any person from coming into contact with any moving part of machinery or any equipment attached thereto, must include-

(a) effective physical barriers at the machinery such as screening, guarding or fencing; or

(b) failsafe electric or electronic barriers interlocked with the machinery in such a way that the machinery would be stopped before persons come into contact with moving machinery or parts thereof; or

(c) effective barriers at a safe distance away from any machinery.

8.8(5) The employer must take reasonably practicable measures to ensure that:

(a) when a compression ignition engine system is found to have any defect which may cause a significant risk to the safety or health of persons, the use of such engine system is discontinued immediately;

(b) all services, maintenance and repairs to diesel-powered equipment are performed by a competent person;

(c) all areas where diesel fuel is stored and where fuelling is carried out are clearly marked and that measures are in place to prevent spillage, contamination and fire, including that –

(i) diesel engine fuel is delivered underground in such a way that no spillage takes place during delivery;

(ii) when fuel is piped underground fuel delivery pipes are drained each time after use;

(iii) fuel is stored underground only in non-flammable robust containers which do not leak; and

(iv) the quantity of fuel stored underground is limited to 3 (three) day's estimated consumption.

8.8(6) The employer must take reasonably practicable measures to ensure that every mobile diesel engine powered unit, when not in use, is kept at a location that is sufficiently ventilated to prevent a build up of diesel fumes in the air at that location sufficient to cause a significant risk when starting up that engine.

8.8(7) The employer must take reasonably practicable measures to ensure that all areas where diesel fuel is stored are clearly indicated on the mine's rescue plan contemplated in regulation 17(19).

(Regulation 8.8 inserted by Government Notice R93 in Government Gazette 30698 dated 1 February 2008)

CONVEYOR BELT

Definitions

For purposes of regulation 8.9, unless the context otherwise indicates -

"conveyor belt installation" means a mechanical system used for the transportation of minerals, material, or persons on a belt.

“designated sections” means the drive section, take up tension section, snub pulley sections, transfer point sections and tail pulley sections.

(Definition of “designated sections” inserted by Regulation 1(a) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

"power supply" means any energy source feeding the drive motor of a conveyor belt installation

8.9(1) In compliance with regulation 8.8(1) the employer must ensure that -

(a) the designated sections of a conveyor belt installation are to be guarded, as per regulation 8.8(4) and not cleaned when any of its parts are in motion; provided that washing with pressurized water from a safe distance outside the guarded area may be carried out, subject to regulation 8.9(1)(i);

(Regulation 8.9(1)(a) substituted by Regulation 1(b) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(b) the power supply and all sources of stored energy of a stationary conveyor belt installation are isolated, made safe and locked-out during either repairs, maintenance or cleaning of spillage in the designated sections; provided that the alignment and training of a conveyor belt installation may be carried out whilst the belt is in motion subject to it being carried out in accordance with a procedure prepared and implemented for this purpose;

(Regulation 8.9(1)(b) substituted by Regulation 1(c) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(c) the driving machinery of the conveyor belt installation can be stopped by any person from any point, along its length where access to the belt is possible;

(d) the driving machinery of the conveyor belt installation is stopped should the belt break, jam or slip excessively;

(e) persons are prevented from entering any side of a conveyor belt installation, unless means have been provided to do so safely;

(Regulation 8.9(1)(e) substituted by Regulation 1(d) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(f) one or more devices are fitted and used to give all persons at any point where access to the conveyer belt installation is possible sufficient prior warning for a period to be determined by the mines risk assessment with a minimum period of 10

seconds that any part of such a conveyer belt installation is about to be put into motion;

(g) the take up or belt tensioning device will not move when repairs, routine cleaning, cleaning of spillage, maintenance at the belt tensioning device or belt splicing is carried out;

(Regulation 8.9(1)(g) substituted by Regulation 1(e) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(h) where two or more conveyor belt installations are used in series, sequence interlocking is provided which automatically will, except when approved maintenance specific procedures are carried out that require an independent conveyor test run-

(aa) stop all conveyor belt installations feeding a conveyor belt installation that has stopped; and

(bb) prevent a conveyor belt installation from starting until the conveyor belt installation onto which it feeds is running;

(Regulation 8.9(1)(h) substituted by Regulation 1(f) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(i) only persons authorized to do so by the employer operate, maintain, clean and repair a conveyor belt installation; and provided that any routine cleaning outside the designated sections of the conveyor section of the belt is carried out in accordance with a procedure prepared and implemented for this purpose;

(Regulation 8.9(1)(i) substituted by Regulation 1(g) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(j) the belt of any conveyor belt installation is installed in such a way that no uncontrolled run away can occur; and

(Regulation 8.9(1)(j) substituted by Regulation 1(h) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(k) the overall structural design of every conveyor belt installation is approved by a competent person.

8.9(2) The employer must take reasonably practicable measures to prevent persons from being injured by material or mineral falling from a conveyor belt installation, which measures must include the fitting and use of one or more devices to prevent run-back or run-on when such conveyor belt installation is stopped.

(Regulation 8.9(3) substituted as 8.9(2) by Regulation 1(i) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(3) The employer must take reasonably practicable measures to prevent persons from being exposed to flames, fumes or smoke arising from a conveyor belt installation catching fire, including instituting measures to prevent, detect and combat such fires.

(Regulation 8.9(4) substituted as 8.9(3) by Regulation 1(j) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(4) The employer must take reasonably practicable measures to prevent persons from being injured as a result of the breaking, misalignment or damage of conveyor belting due to any mineral, material or coal dust accumulating on or around the moving parts of any conveyor belt installation.

(Regulation 8.9(5) substituted as 8.9(4) by Regulation 1(k) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(5) The employer must take reasonably practicable measures to prevent persons at or near conveyor belt installations from being injured due to lightning directly or indirectly striking the installation.

(Regulation 8.9(6) substituted as 8.9(5) by Regulation 1(l) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(6) The employer must take reasonably practicable measures to ensure that the use, operation and inspection of man-riding conveyors comply with SANS 10266: 2006-Edition 1 "The safe use, operation and inspection of man-riding belt conveyors in mines".

(Regulation 8.9(7) substituted as 8.9(6) by Regulation 1(m) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(7) The normative references in SANS 10266: 2006 are not applicable to the employer.

(Regulation 8.9(8) substituted as 8.9(7) by Regulation 1(n) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(8) The employer must take reasonable measures to ensure that the functionality of the devices contemplated in regulation 8.9(1) (c) and (f) and of any other safety devices relating to the conveyor belt installation are tested-

(a) once a week not exceeding ten days, where such devices are in the designated sections;

(b) every three months where such devices are outside of the designated sections; and

(c) immediately after any belt extension or shortening thereof has taken place.

(Regulation 8.9(9) substituted as 8.9(8) by Regulation 1(o) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

8.9(9) The employer must ensure that a written procedure is prepared and implemented for conveyor belt splicing, joining and repairing and for the safe use of chemicals during such splicing, joining and repairing.

(Regulation 8.9(10) substituted as 8.9(9) by Regulation 1(p) of Government Notice R622 in Government Gazette 36761 dated 23 August 2013)

(Regulation 8.9 inserted by Government Notice R93 in Government Gazette 30698 dated 1 February 2008)

8.10 TRACKLESS MOBILE MACHINERY

Definitions

For purposes of regulation 8.10, unless the context otherwise indicates-

"**Braking System**" means a device or combination of devices capable of reducing the speed of a trackless mobile machine to a standstill;

"**Combined Braking Systems**" means a braking system consisting of a service brake and at least one of the following: either a park brake or an emergency brake;

"**Emergency Brake**" means an easily accessible device, which when applied, will bring the trackless mobile machine to a standstill under all operating and emergency conditions;

"**Fail to Safe**" means so designed as to activate and effectively perform its intended function without harm to persons and without human intervention;

"**Park Brake**" means a brake capable of holding fully loaded, parked trackless mobile machine stationary, at the maximum safe operating gradient, without the support of any other braking system;

"**Remote Controlled**" means the control and operation of a trackless mobile machine by an operator, by means of a wireless remote control device or a remote control device by means of a cable system, where the operator has direct physical sight of the trackless mobile machine;

"**Service Brake**" means the primary operating brake capable of retarding and stopping the fully loaded trackless mobile machine;

"**Static Test**" means a test carried out to determine the compliance of the brake holding power of a trackless mobile machine measured against the design specification or an appropriate safety standard;

"**Trackless Mobile Machine**" means any self propelled mobile machine that is used for the purpose of performing mining, transport or associated operations underground or on surface at a mine and is mobile by virtue of its movement on wheels, skids, tracks, mechanical shoes or any other device fitted to the machine, but excludes rail bound equipment, scraper winches, mono rail installations, static winches, draglines, winding machinery installations, track mounted conveyors and any equipment attached thereto;

"**Trailer**" means any vehicle that is not self propelled and needs to be towed by a trackless mobile machine by design.

Regulations

Collisions between trackless mobile machines and pedestrians

8.10.1 The employer must take reasonably practicable measures to ensure that pedestrian are prevented from being injured as a result of collisions between trackless mobile machines and pedestrian. At any mine where there is a significant risk of such collisions, such measures must include at least the following:

8.10.1.1 All electrically or battery powered trackless mobile machines, excluding shovels, bucket wheel excavators and overburden drills, must be provided with means to automatically detect the presence of any pedestrian within its vicinity. Upon detecting the presence of a pedestrian, the operator of the trackless mobile machine and the pedestrian must be warned of each other's presence by means of an effective warning. In the event where no action is taken to prevent potential collision, further means must be provided to retard the trackless mobile machine to a safe speed where after the brakes of the trackless mobile machine are automatically applied without human intervention.

8.10.1.2 All underground diesel powered trackless mobile machines must be provided with means:

8.10.1.2

(a) to automatically detect the presence of any pedestrian within its vicinity. Upon detecting the presence of a pedestrian, the operator of the diesel powered trackless mobile machine and the pedestrian shall be warned of each other's presence by means of an effective warning; and

8.10.1.2

(b) in the event where no action is taken to prevent potential collision, further means shall be provided to retard the diesel powered trackless mobile machine to a safe speed where after the brakes of the diesel powered trackless mobile machine are automatically applied. The prevent potential collision system on the diesel powered trackless mobile machine must fail to safe without human intervention.

(Commencement date of regulation 8.10.1.2(b) still to be determined)

Collisions between diesel powered trackless mobile machines

8.10.2 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of collisions between diesel powered trackless mobile machines. At any opencast or open pit mine where there is a significant risk of such collisions, such measures must include:

8.10.2.1 Every diesel powered trackless mobile machine must be provided with means to automatically detect the presence of any other diesel powered trackless mobile machine within its vicinity; and

8.10.2.1

(a) upon detecting the presence of another diesel powered trackless mobile machine, the operators of both diesel powered trackless mobile machines shall be warned of each other's presence by means of an effective warning; and

8.10.2.1

(b) in the event where no action is taken to prevent potential collision, further means shall be provided to retard the diesel powered trackless mobile machine to a safe speed where after the brakes of the diesel powered trackless mobile machine are automatically applied. The prevent potential collision system on the diesel powered trackless mobile machine must "fail to safe" without human intervention.

(Commencement date of regulation 8.10.2.1(b) still to be determined)

Collisions between trackless mobile machines and rail bound equipment

8.10.2.2 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of collisions between trackless mobile machines and rail bound equipment. At underground operations where there ie a significant risk of such collisions, such measures

must include warning the operators of the trackless mobile machine and the locomotive of each other's presence by means of an effective warning.

Trackless mobile machines running uncontrolled

8.10.3 The employer must take reasonably practicable measures to prevent trackless mobile machines running uncontrolled.

Overturning of any trackless mobile machine

8.10.4 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of overturning of any trackless mobile machine. Roll overprotection structures must be fitted on trackless mobile machines if required in terms of the mine's risk assessment.

Objects falling onto operators and/or passengers of trackless mobile machines

8.10.5 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of objects falling onto operators and/or passengers of trackless mobile machines. Trackless mobile machines must be fitted with falling object protection structures to protect operators and passengers from falling objects if required in terms of the mine's risk assessment.

Persons inadvertently falling out of or being ejected from trackless mobile machines

8.10.6 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of operators and/or passengers inadvertently falling out of or being ejected from any trackless mobile machine in motion.

Braking systems

8.10.7 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of brake failure. Such measures must include ensuring:

8.10.7.1 that trackless mobile machines are operated with adequate and effective braking systems;

8.10.7.2 all braking systems are adequately and routinely tested for intended functionality;

8.10.7.3 all braking systems are regularly maintained; and

8.10.7.4 that where a combined braking system is used, the design of the braking system is such that it complies with the requirements for the separate systems and that it fails to safe.

Restricted operator visibility

8.10.8 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of restricted operator visibility.

Fatigue while operating a trackless mobile machine

8.10.9 The employer must take reasonably practicable measures to ensure that persons are prevented from being injured as a result of fatigue of operators. Such measures must include a fatigue management procedure for operators.

Battery charging facilities

8.10.10 The employer must take reasonably practicable measures to ensure that battery charging facilities are ergonomically designed, constructed and equipped with the following:

i) Adequate through ventilation;

ii) Adequate fire suppression equipment;

iii) Effective provisions to treat persons in the event of acid spillage; and

iv) Appropriate and adequate lighting.

Diesel refuelling facilities

8.10.11 The employer must take reasonably practicable measures to ensure that diesel refueling facilities are ergonomically designed, constructed and equipped with the following:

i) Adequate through ventilation;

ii) Adequate fire suppression equipment;

iii) Effective provisions to cater for oil and diesel spillages; and

iv) Appropriate and adequate lighting.

v) Surface diesel refueling facilities are in accordance with:

a. SANS 10089-1 (2008): The petroleum industry Part 1: Storage and distribution of petroleum products in above-ground bulk installations.

b. SANS 10089-2 (2007): The petroleum industry Part 2: Electrical and other installations in the distribution and marketing sector.

c. SANS 10089-3 (2010): The petroleum industry Part 3: The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipe work at service stations and consumer installations.

Wheels, tyres and rims

8.10.12 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented to prevent persons from being injured as a result of the use, storage and handling of wheels, tyres and rims.

Access of persons to and from the trackless mobile machines

8.10.13 The employer must take reasonably practicable measures to ensure that trackless mobile machines are designed, constructed and maintained such that persons getting on and off, or working on them can do so safely.

Visibility of trackless mobile machines, skid mounted machinery and trailers to persons

8.10.14 The employer must take reasonably practicable measures to ensure that trackless mobile machines, skid mounted machinery and trailers are visible to persons in their vicinity.

Unauthorised access to or operation of trackless mobile machines

8.10.15 The employer must take reasonably practicable measures to ensure that unauthorised persons do not ride on or operate trackless mobile machines.

Isolation and lock-out of trackless mobile machines

8.10.16 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for the safe isolation and lockout of trackless mobile machines.

Operating procedures

8.10.17 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for the safe operation of trackless mobile machines.

Maintenance standards and procedures

8.10.18 The employer must take reasonably practicable measures to ensure that procedures and standards are prepared and implemented for maintaining trackless mobile machines in a safe operating condition.

Remote and remotely controlled trackless mobile machines

8.10.19 The employer must take reasonably practicable measures to ensure that remote control devices for trackless mobile machines using a wireless remote control device comply with:

a) SANS 61000-4-2 (IEC 61000-4-2) Electrostatic immunity discharge test;

b) SANS 61000-4-3 (IEC 61000-4-3) Radiated, radio frequency, electromagnetic field immunity test;

c) SANS 61000-4-4 (IEC 61000-4-4) Electrical fast transient/burst immunity test;

d) SANS 61000-4-5 (IEC 61000-4-5) Surge immunity test.

e) SANS 61000-4-6 (IEC 61000-4-6) Immunity to conducted disturbances, induced by radio-frequency fields;

f) SANS 61000-4-8 (IEC 61000-4-8) Power frequency magnetic field immunity test; and.

g) SANS 61000-4-11 (IEC 61000-4-11) Voltage dips, short interruptions and voltage variations immunity test.

Trailers

8.10.20 The employer must take reasonably practicable measures to ensure that:

a) the design and construction of any trailer is in accordance with specifications approved by a competent person, which specifications must take into account the intended use of the trailer;

b) the design and construction of trailer coupling and uncoupling mechanisms is such that coupling and uncoupling can be done safely and that no inadvertent uncoupling of the trailer can take place; and

c) procedures are prepared and implemented for the safe operation of trailers.

Towing and recovery of trackless mobile machines

8.10.21 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for the safe recovery and towing of trackless mobile machines.

Roadway conditions

8.10.22 The employer must take reasonably practicable measures to ensure that the design, construction and maintenance of roadways are appropriate for the type and category of trackless mobile machine

Selection, training, appointment and licensing of trackless mobile machine operators

8.10.23.1 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for the selection, training, appointment and licensing of trackless mobile machine operators, which procedures must include:

8.10.23.1 physical and psychological pre-selection criteria;

8.10.23.2 a training programme for trackless mobile machine operators, covering:

i) theoretical training in a training Centre;

ii) practical training; and

iii) on the job training.

8.10.23.3 assessment of the trainee, on successful completion of the training programme, by a competent person;

8.10.23.4 that only operators, assessed to be competent are authorised in writing by the responsible engineer to operate trackless mobile machines;

8.10.23.5 that operators of trackless mobile machines are authorized in writing by their supervisor to operate trackless mobile machines. Such authorization must detail their duties, responsibilities, limitations and areas of operation.

8.10.23.6 when an operator has not operated a trackless mobile machine for a period of two years, such operator is re-assessed to be competent by a competent person prior to being issued with a new license.

8.10.23.7 that every operator of trackless mobile machines is issued with a license containing at least the following:

i) a photograph to positively identify the operator;

ii) the trackless mobile machine types which the operator may operate;

iii) date of issue and expiry date; and

iv) the operator's company identification number.

Pre-use inspection procedures

8.10.24 The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for inspecting trackless mobile machines immediately prior to use, which procedures must include:

8.10.24.1 that the operator of the trackless mobile machines physically inspects and ensures that the brakes, lights and any other defined safety features and devices are functioning as intended prior to setting such trackless mobile machines in motion;

8.10.24.2 pre-use check lists that have to be completed by all operators of trackless mobile machines at the beginning of their shift. Such check lists must clearly identify all the components, features and functionalities to be inspected by the operator. For each component, feature or functionality, the check list must clearly indicate the pre-established criteria under which the trackless mobile machines may or may not be put in motion.

Reversing over the edge of a stockpile

8.10.25 The employer must take reasonably practicable measures to prevent any trackless mobile machine reversing over the edge of a stockpile or dump.

Inadvertent movement of the trackless mobile machine

8.10.26 The employer must take reasonably practicable measures to prevent inadvertent movement of any trackless mobile machine whilst parked.

Mandatory carrying of license

8.10.27 All operators of trackless mobile machines must have their originally issued license on their person whilst operating any trackless mobile machine.

Certain regulations not applicable

8.10.28 Regulations 8.10.23 and 8.10.27 do not apply to trackless mobile machines licensed under the National Road Transportation Act 2000 and not used for primary mining activities.

(Regulation 8.10 added by Government Notice R125 in Government Gazette 38493 dated 27 February 2015. Commencement date: 27 May 2015 (with the exception of sub-regulations 8.10.1.2(b) and 8.10.2.1(b))

CHAPTER 9
MINE ENVIRONMENTAL ENGINEERING AND OCCUPATIONAL HYGIENE

Environmental Engineering

Use of Compressed Air

9.1(1) No person may use, or permit any person to use, compressed air:

(a) in such a manner that it might endanger the health or safety of any person; or

(b) to clean the body of any person or clothes being worn by any person.

Early Warning Systems

9.1(2) Where the risk assessment at the mine indicates a significant risk of a fire and/or explosion and/or toxic release, that could lead to an irrespirable atmosphere or an atmosphere immediately dangerous to life or health, the employer must provide an early warning system or systems at all working places.

Ventilation Control Devices

9.1(3) The employer must ensure that polymer underground ventilation control devices or appliances, which have the potential for electrical static discharge-

(a) comply with the SABS standard specifications 1287: Part I and Part II; and

(b) are of anti-static characteristics when used in working places where there is a risk of igniting gas, dust or vapour.

(Regulation 9.1(3) commences on 1 September 2002 – See Government Notice R904 dated 2 July 2002)

Working places where work has ceased

9.1(4) The employer must take reasonably practicable measures to ensure that no employee is exposed to any health hazard at, or emanating from, any working place where work has ceased, either temporarily or permanently.

Occupational Hygiene

Occupational exposure to health hazards

9.2(1) The employer must ensure that the occupational exposure to health hazards of employees is maintained below the limits set out in Schedule 22.9(2)(a) and (b).

System of Occupational Hygiene Measurements

9.2(2) The employer must establish and maintain a system of occupational hygiene measurements, as contemplated in section 12, of all working places where the following hazard limits prevail:

(a)	airborne pollutants	- particulates ≥ $^{1}/_{10}$ of the occupational exposure limit; - gases and vapours ≥ ½ of the occupational exposure limit;
(b)	thermal stress	- heat >25,0^{o}C wet bulb and/or >32,0°C dry bulb and/or >32,0°C mean radiant temperature; - cold <10°C equivalent chill temperature; and
(c)	noise	- ≥82dB$L_{Aeq,8h}$.

[Reference is made to the following Guidelines issued by the Chief Inspector of Mines in terms of section 9(2) of this Act

(i) Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme on Personal Exposure to Airborne Pollutants: Ref. No. DME 16/3/2/4-A1

(ii) Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme on Personal Exposure to Thermal Stress Ref. No. DME 16/3/2/4-A2]

Report to Employer

9.2(3) The competent person engaged by the employer in terms of section 12(1) must, as part of the compliance with section 12(2)(b), report to the employer on -

(a) the occupational hygiene risk assessment, with specific reference to planning, design, implementation and management of occupational hygiene at the mine;

(b) the occupational hygiene hazards that may cause illness or adverse health effects to persons, assess the results in terms of the implementation of control systems and the management thereof, and recommend remedial actions to the employer.

Provision of potable and palatable water

9.2(4) The employer must ensure that sufficient potable and palatable water, which comply with the requirements set out in Schedule 22.9(2)(c), is readily available to all employees and clearly identified as drinkable.

Provision and maintenance of ablution and change house facilities

9.2(5) The employer must provide and maintain suitable and adequate:

(a) change houses to enable employees who perform work involving hazardous substances to change into working clothes at the start of their shift and to wash themselves and change their clothes at the end of their shift;

(b) facilities to enable employees who perform work involving hazardous substances to wash their hands and faces before eating any meals at work; and

(c) readily available latrine facilities, within a reasonable distance from each working place.

Working Clothes

9.2(6) No employee may remove clothes referred to in regulation 9.2(5)(a) from the mine unless such clothes have been decontaminated.

Report to Regional Principal Inspector

9.2(7) The employer must submit to the regional principal inspector of mines, on forms 21.9(2)(a); 21.9(2)(b); 21.9(2)(c) and 21.9(2)(d), 21.9.2(e) and 21.9.2(f) prescribed in chapter 21, and within 60 days from the end of the relevant reporting period as indicated

on each form, reports which contain information on the airborne pollutant, thermal stress and noise aspects of the system of occupational hygiene measurements, established and maintained in terms of regulation 9.2(2).

(Regulation 9.2(7) commences on 1 September 2002 – See Government Notice R904 dated 2 July 2002)
(Regulation 9.2(7) amended by regulation 2 of Government Notice R1226 in Government Gazette 2833 dated 15 December 2005)

Respiratory Protective Equipment

9.2(8) The employer must ensure that all respiratory protective equipment used at a mine, other than body-worn self-contained self-rescuers, comply with the South African bureau of Standards Code of Practice, Homologation of Respiratory equipment SABS 0338.

Illumination of Working Places

9.2(9) The employer must ensure that the illumination at all working places is sufficient to enable employees, who have conformed with the requirements of the vision tests conducted in terms of the Guideline for the Minimum Standards of Fitness to Perform work at a Mine, to perform their work safely.

Repeal

The following regulations made under the Minerals Act, 1991 (Act 50 of 1991) in force in terms of Schedule 4 of the Mine Health and Safety Act, 1996 (Act 29 of 1996) are hereby repealed.

CHAPTERS									
2	**4**	**6**	**7**	**8**	**9**	**10**		**15**	**24**
2.10.7	4.2	6.3.2.4	7.2.2	8.4.2(c)	9.29	10.1.1	10.10.1	15.5.3	24.14.6
2.10.8	4.3.1		7.3.1	8.5.1		10.1.2	10.10.2	15.2	24.20.4
2.10.9	4.3.2			8.5.2		10.2.1	10.10.3	15.2.1	
2.10.10	4.3.3			8.9.3.1		10.2.2	10.10.4	15.2.2	
2.10.7	4.3.4			8.9.4		10.2.3	10.10.5	15.3.1	
2.16.1	4.8			8.9.5		10.2.4	10.10.6		
2.16.2	4.9			8.9.8		10.2.5	10.11.2		
2.16.3				8.9.9		10.2.6	10.16.1		
				8.9.10		10.3.1	10.16.2		
				8.10.12		10.3.2	10.16.3		
				8.10.13		10.3.3	10.16.4		
				8.10.41		10.3.4	10.17.1		
				8.10.42		10.3.5	10.17.2		
				8.10.43		10.3.6	10.17.3		
						10.4	10.17.4		
						10.5.1	10.19.1		

						10.5.2 10.6.1 10.6.2 10.6.3 10.6.4 10.6.5 10.6.6 10.6.7 10.7 10.8 10.9.1.1 10.9.1.2 10.9.2 10.9.3 10.9.4 10.9.5 10.9.6 10.10	10.19.2 10.19.3 10.20.1 10.20.2 10.20.3 10.21.1 10.21.2 10.21.3 10.21.4 10.21.5 10.22 10.23 10.25.2 10.25.3 10.25.4 10.25.5 10.25.8		

(Chapter 9 inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

CHAPTER 10
PLACE OF AN ACCIDENT TO BE LEFT UNDISTURBED

10.1(1) When an accident causes the immediate death of any employee, the place where the accident occurred must not, without the consent of the Principal Inspector of Mines, be disturbed or altered before such place has been inspected by an Inspector or any other person authorised under section 49(4) by the Chief Inspector of Mines.

10.1(2) Regulation 10.1 (1) does not apply if:

(a) such disturbance or alteration is unavoidable to prevent further accidents, to remove fatalities and injured employees or to rescue employees from danger; or

(b) the discontinuance of work at such place would seriously impede the working of the mine.

10.1(3) Despite regulation 10.1 (1), work may be resumed at the place where the accident occurred if such inspector or other person authorised by the Chief Inspector of Mines fails to inspect the place within three days after notice of the accident has been given.

RIGHT TO ATTEND INSPECTION IN LOCO

10.2 Any employee having a material interest in an accident referred to in paragraph 10.1(1) as well as that employee's representative may attend any inspection in loco conducted by an inspector but such attendance is at their own risk. In case such employee is, by reason of death or the severity of his/her injuries, unable to appoint any representative to attend the inspection in loco, the relatives, or in their absence the fellow employees, of such employee may appoint such representative.

(Chapter 10 inserted by the Schedule of Government Notice R134 in Government Gazette 22055 dated 9 February 2001)

CHAPTER 10

MISCELLANEOUS AND GENERAL PROVISIONS

Hazardous Location

Definitions

For purposes of regulation 10.1, unless the context indicates otherwise-

"certified" means type tested, batch tested or produced under an approved product certification scheme, as described in South African National Standard ARP 0108 "Regulatory requirements for explosion protected apparatus";

"double protected" means a combination of any two independent types of explosion protection in such a way that in the event of failure of one of them, the other independent second means provides the required level of protection;

"explosion protected apparatus" means any apparatus used in a hazardous location and selected in accordance with the guidelines as defined in the South African National Standard SANS 10108-2005, 'The classification of hazardous locations and the selection of apparatus for use in such locations" and the Aanbevolle / Recommended Praktyk / Practice ARP 0108, "Regulatory requirements for explosion protected apparatus"

"hazardous location" means any location, where there may be a significant risk of igniting gas, dust, mist or vapour, including the following-

(a) for underground coal mines any location where, under normal operating conditions, there is a continuous presence of flammable gas, measured at a concentration of 0,5 % or more by volume in the general body of the air, including:

(i) a return airway, and

(ii) any location determined by risk assessment but not less than 180m from any working face.

(b) for underground mines other than coal mines any location where, under normal operating conditions, there is a continuous presence of flammable gas measured at a concentration of 0,5% or more by volume in the air.

(c) for surface mines and surface locations at all mines including offshore installations any location as identified in accordance with South African National Standard SANS 10108: 2004 (Edition 5), "The classification of hazardous locations and the selection of apparatus for use in such locations".

“Light-metal" means-

(a) aluminium;

(b) magnesium;

(c) titanium; and

(d) any alloy containing more than -

(i) 15 per cent aluminium by mass of the alloy;

(ii) 15 per cent aluminium, magnesium and /or titanium, taken together by mass of the alloy; or

(iii) 6 per cent magnesium and /or titanium, taken together or separately, by mass of the alloy.

10.1(1) The employer must take reasonable measures to ensure that all electrical reticulation systems used in hazardous locations are designed and selected by a competent person or under the direct supervision of such a competent person.

10.1(2) The employer must take reasonably practicable measures to prevent persons from being injured in any hazardous location as a result of fire, explosion or the ignition of gas, dust, mist or vapour. Such measures must ensure that -

(a) all hazardous locations are identified, clearly marked and recorded on a plan or register, which must be kept updated and readily available at the mine;

(b) only explosion protected apparatus and systems certified for use in a hazardous location in accordance with the South African National Standard ARP 0108: 2005, "Regulatory requirements for explosion protected apparatus", are used in any hazardous location;

(c) the selection of explosion protected apparatus used in any hazardous location is done in accordance with SANS 10108:2005 "The classification of hazardous locations and the selection of apparatus for use in such locations". The normative references as listed in SANS 10108 are not applicable to the employer;

(d) the installation, inspection and maintenance of explosion protected apparatus used in a hazardous location is carried out in accordance with SANS 10086-1 2005 "The installation, inspection and maintenance of equipment used in explosive atmospheres Part 1 : Installations including surface installations on mines" and SANS 10086-2 2004 “The installation, inspection and maintenance of equipment used in explosive atmospheres Part 2: Electrical equipment installed underground in mines" as appropriate;

(e) any repair, overhaul or modification to any explosion protected apparatus used in any hazardous location does not alter its design characteristics and is carried out in accordance with SANS 10086-3 2005”. The installation, inspection and maintenance of equipment used in explosive atmospheres Part 3: Repair and overhaul of apparatus used in explosive atmospheres";

(f) explosion protected apparatus used in any hazardous location is installed, maintained, repaired, overhauled, inspected and tested by a competent person;

(g) only double protected or intrinsically safe type Ex ia explosion protected apparatus remains energized where flammable gas is present in concentrations in excess of 1.4% by volume in the air. All other explosion protected apparatus must be de-energized at flammable gas concentrations in excess of 1.4% by volume in air;

(h) every battery operated self propelled mobile machine used in any hazardous location complies with "SANS 1654: 2005 DC powered machines for use in hazardous areas in mines";

(i) any trailing cable used in any hazardous location is -

(aa) provided with a pilot circuit of intrinsically safe voltage and current which will prevent power being supplied to the cable unless the earth conductor is continuous;

(bb) provided with a means (system) to prevent arcing of power contacts of any plug used in conjunction with the cable while such plug is being inserted or withdrawn;

(cc) provided with a supply of electricity of which the earth fault current is limited to a value so that there is no significant risk of electrocution;

(dd) individually screened on poly phase and collectively screened on single phase power conductors; and

(ee) designed for being dragged across the ground;

(j) measures are in place to verify, as far as reasonably practicable, that electrical circuits and components of such circuits used for explosion protected apparatus have been correctly designed, selected, installed and repaired;

(k) only internal compression ignition engine system and machines that comply with the South African National Standard . SANS 868-1-1 2005: "Compression-ignition engine systems and machines powered by such engine systems, for use in mines and plants with explosive gas atmospheres or explosive dust atmospheres or both", Parts 1-1 or 1-2, whichever is applicable, are used in a hazardous location.

(l) all compression ignition engines used in a hazardous location have a valid Inspection (IA) certificate for the components and the complete machine and test reports issued by an accredited testing laboratory (ATL) that must be available at the mine

(m) when a compression ignition engine system has any defect which may contaminate the air and cause a significant risk to the safety or health of persons, the use of such engine system is discontinued immediately;

(n) all maintenance and repairs to diesel-powered equipment is performed by a competent person;

(o) no apparatus, component or machinery made of a light metal is used in a hazardous location unless such apparatus, component or machinery is:-

(ff) covered by a housing, sheath, cover or coating (excluding paint) that will prevent such ignition; or

(gg) contained, situated or used in such a manner that does not create a significant risk of such ignition; or

(hh) complies with South African National Standard SANS 10012:2004 "The use of light metals in hazardous locations at mines".

Water Storage and Pumping Regulations

10.2(1) The employer must take reasonable measures to ensure that no person is injured as a result of the failure of any dam wall, plug or barricade keeping back water underground due to inappropriate design, sub-standard construction, or inadequate inspection and maintenance of such dam wall, plug or barricade.

10.2(2) The measures to be taken by the employer to comply with regulation 10.2(1) above, must include measures to ensure that-

(a) any dam wall, plug or other barricade keeping back water underground, where the product of the capacity in cubic meters and the hydraulic head in meters of the dam storing water underground and of which they form part, exceeds 50 000, is designed by and constructed under the supervision of a competent person[1];

(b) any dam wall, plug or barricade contemplated in sub-regulation (a) above is maintained by a competent person[2] ;

(c) any dam wall, plug or other barricade keeping back water underground, where the product of the capacity in cubic meters and the hydraulic head in meters of the dam storing water underground and of which they form part, does not exceed 50 000, is designed, constructed, inspected and maintained under the supervision of a competent person[2]; and

(d) all design calculations and drawings of dam walls, plugs and barricades and mine plans indicating the exact position of such dam walls, plugs and barricades are stored safely for the life of such dam walls, plugs and barricades and are readily available.

10.2(3) The employer must:

(a) take reasonably practicable measures to prevent persons from being injured by the unintentional release of water and hydraulic pressure from any dam storing water underground; and

(b) prepare and implement a procedure to prevent injury to persons involved with the installation, construction, inspection, testing and maintenance of the following hydraulic pressure systems -

(i) high pressure water jetting systems;

[1] "c*ompetent person" defined in Regulation 22.10.2(2)(a)*
[2] "c*ompetent person" defined in Regulation 22.10.4(2)(b)*

(ii) shaft high pressure cement columns;

(iii) shaft water and sludge columns;

(iv) dam water and sludge systems;

(v) mine residue discharge pumps;

(vi) hydraulic water accumulator systems;

(vii) high pressure pumping installations; or

(viii) backfill columns and associated equipment.

Draw Points, Tipping Points, Rock Passes and Box Fronts

Definitions

For purposes of regulation 10.3, unless the context indicates otherwise -

"box front" means a structure installed at an opening of a rock pass to control the flow of rock, and includes bulkheads, chutes, platforms, control mechanisms, cylinders and similar accessories;

"draw point" means a point where rock is loaded out or allowed to flow out from an excavation;

"rock" means any mineral, ore and waste in solid form and coal;

"rock pass" means any inclined excavation in which any rock is transported by the force of gravity; and

“tipping point" means the upper inlet into a rock pass.

10.3(1) The employer must take reasonably practicable measures to ensure that:

(a) the designs, and any modification thereto that can change the design criteria, of structures for draw points, tipping points, rock passes and box fronts are recorded and approved in writing by a competent person; and

(b) the approved designs and records of approval are kept readily available at the mine for the life of such installation.

10.3(2) The employer must take reasonably practicable measures to ensure that:

(a) a competent person in writing certifies that the construction, installation and modification of draw points, tipping points, rock passes and box front structures have been done in accordance with their design criteria before they are used; and

(b) the written certifications contemplated in regulation 10.3(2)(a) are kept readily available at the mine for the life of the particular structure.

10.3(3) The employer must take reasonably practicable measures to ensure that written procedures are prepared and implemented for:

(a) the removal of structures for draw points, tipping points and box fronts;

(b) persons entering a rock pass while it contains water, mud, rock or a combination thereof;

(c) clearing blocked rock passes; and

(d) the lock-out, maintenance and rehabilitation of draw points, tipping points, rock passes and box fronts.

(Second Chapter 10 inserted by Government Notice R94 in Government Gazette 30698 dated 1 February 2008)

CHAPTER 11
OCCUPATIONAL HEALTH

(Heading amended by the Schedule to Government Notice R786 in Government Gazette 23498 dated 14 June 2002)

(Heading replaced by Regulation 1 of Government Notice R621 in Government Gazette 36761 dated 23 August 2013)

Appeal regarding finding of unfitness to perform work

11.1 An appeal under section 20(1) must be lodged with the Medical Inspector-

(a) within 30 days of a decision or finding that an employee is unfit to perform any particular category of work;

(b) within 90 days of the date of issue of an exit medical certificate; or

(c) within such period as the Medical Inspector may allow on good cause shown.

(Chapter 11, regulation 11.1, inserted by the Schedule of Government Notice R721 in Government Gazette 20155 dated 11 June 1999)

Annual Medical Report

11.2 The annual medical report contemplated in section 16(1) must include details regarding at least the following:

(a) (i) Name of mine.

(ii) Name, address and telephone number of the occupational medical practitioner responsible for compiling the annual medical report.

(b) Type of mine. Commodity or commodities being mined.

(c) Total number of employees (including contract workers) who were subject to medical surveillance in terms of section 13 during the reporting period and the total number of hours worked by those employees.

(d) The number of initial, periodical and exit examinations conducted as part of the medical surveillance system.

(e) An analysis of the employees' health based on the employees' records of medical surveillance, without disclosing the names of the employees.

(f) Comments on the future direction of the medical surveillance system.

(g) The number of employees certified for compensation for occupational diseases.

(Regulation 11.2 inserted by the Schedule of Government Notice R1486 in Government Gazette 20714 dated 17 December 1999)

11.3 Exit certificate

The exit certificate contemplated in section 17 must include details regarding at least the following:

11.3.1 Particulars of mine:

(a) Name of mine

(b) Types of mine commodities being mined

(c) Postal address

(d) Telephone number

(e) Fax number

(f) Name of Occupational Medical Practitioner responsible for producing the exit certificates in terms of Section 17(4).

11.3.2 Particulars of employees:

(a) Name

(b) Date of birth

(c) Identification details: Identity number, Passport number, Industry number and company number

(d) ate *[sic]* of initial medical examination

11.3.3 Exit medical summary:

(a) Date of last medical examination.

(b) Clinical comments on chest x-ray (CXY).

(c) International Labour Organization (lLO) classification of the chest x-ray (CXR) if applicable.

(d) Lung function Testing:

(i) Forced Expiratory Volume in 1 second (FEV1) - actual and predicable percentages.

(ii) Forced Vital Capacity (FVC) - actual and predicable percentages.

(iii) Ratio of forced Expiratory Volume in 1 second (FEV1)/Forced Vital Capacity (FVC) expressed as a percentage.

(e) Audiometry

(i) Baseline Audiogram readings (measurement in dB at 0.5,1, 2, 3, 4 KHz) in terms of regulation 11.4

(ii) Baseline Percentage Loss of Hearing (PLH) as contemplated in instruction 171, issued by the Compensation Commissioner in terms of the Compensation for Occupational Injuries and Diseases Act, 1993

(iii) Exit Audiogram readings (measurement is *[sic]* dB at 0.5,1, 2, 3, 4 KHz)

(iv) Exit PLH as contemplated in instruction 171

(f) Biological monitoring results of the employee, and provide comments on abnormal results.

(g) Occupational diseases previously incurred and current including severity.

(h) Any compensation claims submitted and/or compensation received.

(i) Name and signatures of Occupational Medical Practitioner.

(j) Signature of employee, witness and date of receipt by employee of a copy of the exit certificate.

(Regulation 11.3 inserted by the Schedule of Government Notice R1486 in Government Gazette 20714 dated 17 December 1999) and regulation 11.3(b)(v) corrected by GN R303 in Government Gazette 21029 dated 24 March 2000)

(Regulation 11.3 substituted Government Notice R1053 in Government Gazette 33752 dated 12 November 2010)

(Regulation 11.3 substituted by Regulation 2 of Government Notice R621 in Government Gazette 36761 dated 23 August 2013)

NOISE

System of Medical Surveillance

11.4(1) The employer must establish and maintain a system of medical surveillance, as contemplated in section 13, of all employees in any working place where the equivalent, continuous A-weighted sound pressure level, normalised to an eight hour working day or a forty hour working week, is equal to or exceeds 85 dB(A).

Types of Audiograms

11.4(2) The system of medical surveillance contemplated in regulation 11.4 (1) must consist of a baseline audiogram, periodic audiograms and an exit audiogram.

11.4(3) A competent person must perform all audiograms.

Baseline Audiogram

11.4(4) A baseline audiogram must be recorded before an employee commences employment or within 30 days of commencement of employment in any working place contemplated in regulation 11.4(1).

11.4(5) Testing for the baseline audiogram must not be done within 16 hours from when an employee has been exposed to an environment in which the noise level was equal to or exceeded 85 dB(A). The use of hearing protection devices to effect this attenuation will not be acceptable.

11.4(6) The baseline audiogram is the better of the employee's two audiograms performed on the same day and that do not differ from each other by more than 10 dB for any of the following measured test frequencies, i.e. 0.5, 1, 2, 3, and 4 kilohertz (kHz).

11.4(7) If it is impossible to obtain two audiograms that comply with the requirements of regulation 11.4(6), the employees must be referred to a competent person to establish baseline-hearing levels in accordance with regulation 11.4(6).

11.4(8) If it is impossible for the competent person to establish baseline-hearing levels as contemplated in regulation 11.4(7), the competent person may establish baseline-hearing levels by using other techniques, such as speech reception thresholds.

Periodic Audiograms

11.4(9) The employer must ensure that a periodic audiogram is obtained at least annually for all employees subject to medical surveillance in terms of regulation 11.4(1).

11.4(10) The periodic audiogram contemplated in regulation 11.4(9) must be performed at least 16 hours after any exposure of the employees to a noise level equal to or exceeding 85 dB(A.) Use of appropriate hearing protection devices to reduce exposure will be acceptable.

Exit Audiogram

11.4(11) In addition to the exit medical examination for the purposes of section 17, the employer must arrange an audiogram for every employees subject to medical surveillance in terms of regulation 11.4(1) and who is permanently transferred to a working place in respect of which medical surveillance is not required under regulation 11.4(1).

11.4(12) An audiogram conducted within the preceding six months may be used as an exit audiogram for purposes of section 17 or regulation 11.4(11).

(Regulation 11.4 inserted by the Schedule of Government Notice R786 in Government Gazette 23498 dated 14 June 2002)

REGULATIONS FOR MEDICAL SURVEILLANCE FOR ASBESTOS DUST EXPOSURE

ASBESTOS DUST

System of Medical Surveillance

11.5(1) The employer must establish and maintain a system of medical surveillance as contemplated in section 13, for all employees who perform work in any working place where exposure to asbestos dust occurs in excess of 50% of the OEL for asbestos dust as set out in Schedule 22.9(2)(a) and (b).

Types of Examinations to be Performed

11.5(2) The system of medical surveillance contemplated in regulation 11.5(1) must consist of an initial examination, periodic examinations and an exit examination.

Initial Examination

11.5(3) The employer must ensure that an initial examination is performed before an employee commences employment, or within 30 days of commencement of employment, in any working place contemplated in regulation 11.5(1). The initial examination must consist of:

(a) the completion of an appropriate respiratory questionnaire aimed at establishing the employee's medical profile, including current and past cardio-respiratory problems and an occupational history detailing possible exposure to asbestos dust.

(b) a cardio-respiratory examination, including:

(i) a full size chest x-ray; and

(ii) a lung function test.

Periodic Examinations

11.5(4) The employer must ensure that the following periodic examinations are conducted on all employees required to undergo medical surveillance in terms of regulation 11.5(1):

(a) a cardio-respiratory examination, including a lung function test, but excluding a chest x-ray, one year after the initial examination contemplated in regulation 11.5(3); and thereafter

(b) a cardio-respiratory examination, at three yearly intervals, which includes:

(i) a full size chest x-ray; and

(ii) a lung function test.

Exit Examination

11.5(5) In addition to the exit medical examination for the purposes of section 17, the employer must arrange a cardio-respiratory examination for every employee subject to medical surveillance in terms of regulation 11.5(1) and who is permanently transferred to a working place in respect of which medical surveillance is not required under regulation 11.5(1).

11.5(6) A full size chest x-ray conducted within the preceding twelve months may be used as the exit, chest x-ray for the purposes of section 17 and regulation 11.5(5) .

11.5(7) A lung function test conducted within the preceding twelve months may be used as the lung function test for the purposes of section 17 and regulation 11.5(5).

(Regulation 11.5 inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

REGULATIONS FOR MEDICAL SURVEILLANCE FOR COAL DUST EXPOSURE

COAL DUST

System of Medical Surveillance

11.6(1)

(a) The employer must establish and maintain a system of medical surveillance as contemplated in section 13, for all employees who perform work in any working place where exposure to coal dust occurs in excess of 50% of the OEL for coal dust with less than 5% crystalline silica content as set out in Schedule 22.9(2)(a) and (b).

(b) If the cystalline *[sic]* silica content of the coal dust is 5% or more, the employer must establish and maintain a system of medical surveillance as contemplated in regulations 11.7(1) to 11.7(7):

Types of Examinations to be Performed

11.6(2) The system of medical surveillance contemplated in regulation 11.6(1)(a) must consist of an initial examination, periodic examinations and an exit examination.

Initial Examination

11.6(3) The employer must ensure that an initial examination is performed before an employee commences employment, or within 30 days of commencement of employment, in any working place contemplated in regulation 11.6(1)(a). The initial examination must consist of:

(a) the completion of an appropriate respiratory questionnaire aimed at establishing the employee's medical profile, including current and past cardio-respiratory problems and an occupational history detailing possible exposure to coal dust.

(b) a cardio-respiratory examination, including :

(i) a full size chest x-ray; and

(ii) a lung function test.

Periodic Examinations

11.6(4) The employer must ensure that the following periodic examinations are conducted on all employees required to undergo medical surveillance in terms of regulation 11.6(1)(a):

a) a cardio-respiratory examination, including a lung function test, but excluding a chest x-ray, one year after the initial examination contemplated in regulation 11.6(3); and thereafter

b) a cardio-respiratory examination, at three yearly intervals, which includes:

(i) a full size chest x-ray; and

(ii) a lung function test:

Exit Examination

11.6(5) In addition to the exit medical examination for the purposes of section 17, the employer must arrange a cardio-respiratory examination for every employee subject to medical

surveillance in terms of regulation 11.6(1)(a) and who is permanently transferred to a working place in respect of which medical surveillance is not required under regulation 11.6(1)(a).

11.6(6) A full size chest x-ray conducted within the preceding twelve months may be used as the exit chest x-ray for the purposes of section 17 and regulation 11.6(5).

11.6(7) A lung function test conducted within the preceding twelve months may be used as the lung function test for the purposes of section 17 and regulation 11.6(5).

(Regulation 11.6 inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

REGULATIONS FOR MEDICAL SURVEILLANCE FOR SILICA DUST EXPOSURE

CRYSTALLINE SILICA DUST

System of Medical Surveillance

11.7(1) The employer must establish and maintain a system of medical surveillance as contemplated in section 13, for all employees who perform work in any working place where exposure to crystalline silica dust occurs in excess of 10% of the OEL for crystalline silica dust as set out in Schedule 22.9(2)(a) and (b) .

Types of Examinations to be Performed

11.7(2) The system of medical surveillance contemplated in regulation 11.7(1) must consist of an initial examination, periodic examinations and an exit examination.

Initial Examination

11.7(3) The employer must ensure that an initial examination is performed before an employee commences employment, or within 30 days of commencement of employment, in any working place contemplated in regulation 11.7(1). The initial examination must consist of:

(a) the completion of an appropriate respiratory questionnaire aimed at establishing the employee's medical profile, including current and past cardio-respiratory problems and an occupational history detailing possible exposure to silica dust.

(b) a cardio-respiratory examination, including:

(i) a full size chest x-ray; and

(ii) a lung function test.

Periodic Examinations

11.7(4) The employer must ensure that the following periodic examinations are conducted on all employees required to undergo medical surveillance in terms of regulation 11.7(1):

(a) a cardio-respiratory examination, including a lung function test, but excluding a chest x-ray, one year after the initial examination contemplated in regulation 11.7(3); and thereafter

(b) a cardio-respiratory examination, at three yearly intervals, which includes:

(i) a full size chest x-ray; and

(iii) a lung function test.

(Publisher's Note: Numbering as published in the original Government Gazette)

Exit Examination

11.7(5) In addition to the exit medical examination for the purposes of section 17, the employer must arrange a cardio-respiratory examination for every employee subject to medical surveillance in terms of regulation 11.7(1) and who is permanently transferred to a working place in respect of which medical surveillance is not required under regulation 11.7(1).

11.7(6) A full size chest x-ray conducted within the preceding twelve months may be used as the exit chest x-ray for the purposes of section 17 and regulation 11.7(5).

11.7(7) A lung function test conducted within the preceding twelve months may be used as the lung function test for the purposes of section 17 and regulation 11.7(5).

(Regulation 11.7 inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

11.8 REPORTING OF OCCUPATIONAL DISEASES

(1) The employer must report to the Principal Inspector of mines any of the following occupational diseases within 30 days from the date of diagnosis as a result of working in the mines:

(a) Occupational lung diseases;

(b) Other occupational diseases as covered by the Compensation for Occupational Injuries and Diseases Act, 1993 (Act no. 130 of 1993) as amended ("***COIDA***"), or Occupational Diseases in the Mines and Works Act, 1973 (Act no. 78 of 1973) as amended ("***ODMWA***");

(c) Noise Induced Hearing Loss (when Percentage Loss of Hearing (PLH) shift is 5% or more);

(d) Other illnesses that may impact on the health and safety of employees, as determined through instructions by the Chief Inspector of mines.

(2) In reporting the reportable occupational diseases listed in Regulation 11.8(1) using the form DMR 231 Health Incident Report (HIR) Form, the following must be considered.

(a) Occupational lung diseases

(i) Silicosis and Coal Worker's Pneumoconiosis (CWP)

A radiological diagnosis of silicosis or coal-workers' pneumoconiosis that takes into account:

(i) (a) History of significant exposure to airborne silica or coal dust; and

(i) (b) Chest X-ray consistent with silicosis or coal-workers' pneumoconiosis, or

(i) (c) Lung tissue pathology consistent with silica or coal- workers' pneumoconiosis exposure where history has been done at post mortem.

(ii) Cardio-respiratory Tuberculosis

Tuberculosis affecting the respiratory organs and/or the heart muscles:

(ii) (a) Where an employee was exposed and contracted the disease while performing risk work at a mine; or

(ii) (b) Within 12 months after leaving employment.

(b) Other Occupational Lung Diseases

These include other occupational lung diseases with significant correlation with the risk in that particular mine which are also compensable under "***ODMWA***" or "***COIDA***".

(c) Noise Induced Hearing Loss

This includes an impairment of hearing as a result of exposure to excessive noise at a mine with; *[sic]*

(i) PLH shift of more than or equal to 5% from the baseline audiometry; and

(ii) PLH shift of more than 5% where baseline audiometry is unknown or regarded as zero.

(d) Other Illnesses

Other illnesses that may impact on the health and safety of employees, as determined through instructions by the Chief Inspector of Mines. These may include lifestyle diseases such as diabetes, hypertension etc.

(3) Occupational diseases referred to in Regulation 11.8(1)(a), (b) and (c) must be reported on a prescribed form to the Principal Inspector of Mines within 30 days from the date of diagnosis; and other illnesses referred to in Regulation 11.8.1(d) based on an instruction from the Chief Inspector of Mines.

(Regulation 11.8 inserted by Government Notice R701 in Government Gazette 37980 dated 12 September 2014)

11.9(9) **RECORD OF HAZARDOUS WORK**

(a) An up to date copy of the employee's Record of Hazardous Work recorded in prescribed form DMR 276 must be delivered to the Medical Inspector and also attached to the Exit Certificate as contemplated in terms of Section 14 of the Act.

(Please note that a copy of Form DMR 276 will be provided upon request. Kindly refer to our website for our contact details.)

(Regulation 11.9 inserted by Regulation 4 of Government Notice R621 in Government Gazette 36761 dated 23 August 2013)

CHAPTER 13
OUTLETS, LADDERWAYS AND TRAVELLING WAYS

Outlets

13.1(1) The employer must prevent employees from being trapped in any underground excavation by providing whenever practicable, from every underground working place, two exits, each of which is connected to separate means of egress to the surface.

13.1(2) Where it is not practicable to provide two exits as contemplated in regulation 13.1(1) above, the employer must implement other reasonably practicable measures, determined

by the mine's risk assessment, to prevent employees from being trapped in any underground excavation.

(Regulation 13.1(2) amended by GNR 90 in Government Gazette 30698 dated 1 February 2008)

13.1(3) Except in the case of emergency no person may enter or leave the underground workings of a mine except by means of ingress or egress especially provided or set apart for that purpose by the employer unless such person is authorised to do so by the employer.

13.1(4) The following regulations promulgated under Minerals Act, 1991 (Act No. 50 of 1991) in force in terms of item 4 of Schedule 4 of the Act, are hereby repealed-

Chapter 6	**Chapter 16**	**Chapter 19**
6.1.1	16.98	19.1
6.1.2	16.98.1	19.2.1
6.1.3	16.98.2	19.2.2
6.2.1	16.98.3	19.3.1
6.2.2	16.98.4	19.3.2
6.2.3	16.98.5	19.3.3
6.2.4	16.99	19.3.4
6.2.5	16.100	19.4
6.3.1	16.101	19.5
6.3.2	16.102	19.6
6.3.2.1	16.103	
6.3.2.6	16.103.1	
6.3.2.7	16.103.2	
6.3.2.8	16.104	
6.3.2.12		
6.3.3.1		
6.3.3.2		
6.3.3.3		
6.3.3.4		
6.3.3.5		
6.3.3.6		
6.9		

6.11		

(Regulation 13.1(4) deleted and substituted by GNR 90 in Government Gazette 30698 dated 1 February 2008)

(Chapter 13 inserted by the Schedule in Government Notice R1224 in Government Gazette 28333 dated 15 December 2005)

CHAPTER 14

PROTECTION OF THE SURFACE AND THE WORKINGS

FALL OF GROUND REGULATIONS

Entering of working places

14.1 At every underground mine where a risk of rock bursts, rock falls or roof falls exists, and at every other mine where a significant risk of rock bursts, rock falls or roof falls exists, the employer-

14.1(1) may not permit any person, other than those persons examining and making safe, to enter any of the following areas at the mine until such areas are declared safe by competent persons:

(a) the area between the face and the nearest line of permanent support; and

(b) access ways, travelling ways or places where persons need to travel or work;

14.1(2) must ensure that the examinations for purposes of regulation 14.1(1) are carried out as often as may be required, in terms of the mine's risk assessment, to maintain a safe working environment;

14.1(3) must ensure that a record of declarations contemplated in regulations 14.1(1) and 14.1(5) is kept for a period of at least three months;

14.1(4) must ensure that where areas contemplated in regulation 14.1(1) have not been examined, made and declared safe, persons are prevented from inadvertently entering such areas;

14.1(5) must ensure, if at any time a working place or part thereof becomes unsafe during a shift, that all persons, other than those examining and making safe, are removed from such unsafe area and are not permitted to return thereto until declared safe by a competent person .

14.1(6) must ensure that a quality, assurance system is in place, which ensures that the support units used at the mine provide the required performance characteristics for the loading conditions expected;

14.1(7) must ensure that only competent persons install, maintain and remove any support unit;

14.1(8) must ensure that the input of a competent person is properly and timeously considered and integrated into mine design, planning and operations.

14.2 No person, other than those persons examining and making safe, may enter any of the areas contemplated in regulation 14.1(1) until such areas have been declared safe as contemplated in regulations 14.1(1) and 14.1(5).

14.3 The following regulations made under the Minerals Act, 1991 (Act 50 of 1991) in force in terms of Schedule 4 of the Mine Health and Safety Act, 1996 (Act 29 of 1996) are hereby repealed

7.1 7.2.2 7.4.5 8.1.1 8.1.2 8.1.3 8.1.5 8.1.6 8.2 8.3.1 8.3.2	8.4.2(a), (b) and (d) 8.4.3 8.4.4.1 8.4.4.2 8.4.4.3 8.4.5 8.8 8.9.1, 8.9.2 8.9.6 8.10.11

(Chapter 14, regulation 14.1 – 14.3, inserted by the Schedule of Government Notice R959 in Government Gazette 23615 dated 12 July 2002, with effect from 1 January 2003.)

14(4) The employer must take reasonable measures to ensure where the condition at any working place pose or might pose a significant risk to the health and safety of persons resulting from an ingress of water or other fluid material likely to cause drowning, asphyxiation, inundation, physical impact, chemical exposure or being trapped, that all working places are adequately protected against such ingress of water or other fluid material.

14(5) The employer must take reasonable measures to ensure that no person is endangered by any significant risks such as falling, drowning, slipping, asphyxiation or being struck by rock or other material associated with subsidences or cavities brought about by mining operations.

14(6) The employer must take reasonable measures to ensure that no person is endangered by any significant risks such as the collapse of surface buildings and structures thereon

associated with structural failure as a result of the removal of any type of support provided for the protection of the surface of a mine or structures or objects thereon.

14(7) The following regulations made under the Minerals Act, 1991 (Act 50 of 1991), in force in terms of Schedule 4 of the Mine Health and Safety Act, 1996 (Act 29 of 1996) are hereby repealed: -

5.1.1	5.4.5	5.6.3
5.1.2	5.4.6	5.7
5.2	5.5	5.10
5.3.3	5.6.1	
5.3.4	5.6.2	

(Regulations 14(4), (5), (6) and (7) inserted by the Schedule in Government Notice R1323 in Government Gazette 26963 dated 12 November 2004)

CHAPTER 16
RESCUE, FIRST AID AND EMERGENCY PREPAREDNESS AND RESPONSE

Report to Employer Relating to Explosions, Fires and Flooding

16.1(1) The employer must ensure that a competent person reports to the employer, at appropriate intervals determined in accordance with the mine's risk assessment, on the adequacy of escape and rescue procedures at the mine relating to explosions, fires and flooding.

(Regulation 16.1 inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

Issuing of Self-Contained Self-Rescuers

Coal Mines

16.2(1) The employer of every coal mine must ensure that no person goes underground at the mine without a body-worn self-contained self-rescuer, which complies with the South African Bureau of Standards specification SABS 1737.

Mines other than Coal Mines

16.2(2) If at any mine other than a coal mine, the risk assessment in terms of section 11 shows that there is a significant risk that employee's may be exposed to irrespirable atmospheres at any area at the mine, the employer must ensure that no person goes into

such area without a body-worn self-contained self-rescuer, which complies with the South African Bureau of Standards specification SABS 1737.

Sole Allocation of a Self-Contained Self-Rescuer

16.2(3) Any body-worn self-contained self-rescuer supplied to any employee, employed in a full time capacity at the mine, in terms of sub regulations 16.2(1) and 16.2(2), must be allocated to the employee for that employee's sole use for the duration of the deployment of that self-contained self-rescuer at the mine or until that self-contained self-rescuer becomes defective and the employee is issued with another self-contained self-rescuer as required by these regulations.

No Defective Self-Contained Self-Rescuer is Issued

Employer to ensure no defective self-contained self-rescuer is issued

16.3(1) The employer must ensure that no defective self-contained self-rescuer is issued for use to any employee at a mine.

Monitoring Programme

Annual testing of a Self-Contained Self-Rescuer

16.4(1) The employer must annually have a representative sample of the self-contained self-rescuers at the mine tested by an organisation accredited to do so in terms of the South African National Accreditation System for assessment of the structural integrity and functional performance.

Such representative sample must not be less than 1% of the self-contained self-rescuers at the mine and must be representative of the age and deployment of the self-contained self-rescuers.

Record keeping

16.4(2) The employer must keep the following information, on self-contained self-rescuers at the mine, covering the preceding 24 months:-

(a) total number and makes of self-contained self-rescuers in service at the mine;

(b) number and make of self-contained self-rescuers purchased by the mine in that period;

(c) number and make of self-contained self-rescuers withdrawn from use by the mine in that period;

(d) the number of shifts worked per day (1, 2 or 3);

(e) number of self-contained self-rescuers in daily use (average for each month);

(f) number of employees underground (average per shift);

(g) number of spare self-contained self-rescuers available (average per month);

(h) a tabulation of the type of defects found;

(i) number of self-contained self-rescuers repaired/refurbished; and

(j) number of self-contained self-rescuers tested in terms of regulation 16.4(1).

(Chapter 16, regulation 16.2 – 16.4, inserted by the Schedule of Government Notice R569 in Government Gazette 23410 dated 17 May 2002 – with effect from 1 September 2002)

Emergency Preparedness and Response

Definitions.

For purposes of regulation 16.5, unless the context indicates otherwise -

"emergency" means a situation, event or set of circumstances at a mine that could threaten the health or safety of persons at or off the mine, and which requires immediate remedial action, such as the evacuation, rescue or recovery of persons, to prevent serious injury or harm, or further serious injury or harm, to persons;

"breathing apparatus" means an apparatus, which renders the user independent from breathing from the atmosphere for a minimum of two (2) hours.

16.5(1) The employer at every underground mine must-

(a) provide and maintain, readily available at the mine, mine rescue teams, consisting of at least five competent persons, per mine rescue team, in the following minimum proportions determined by the maximum number of persons who could be underground at any one time-

(i) where there could be between 100 and 1100 persons underground, at least 1 mine rescue team;

(ii) where there could be between 1101 and 3600 persons underground at least 2 mine rescue teams;

Side note: Reference is made to the Guideline for the Compilation of a Code of Practice on Emergency Preparedness and Response. Reference 16/3/2/1-A5, as issued by the Chief Inspector of Mines, in terms of section 9.2 of the Mine Health and Safety Act.

(iii) where there could be between 3601 and 8100 persons underground at least 3 mine rescue teams; and

(iv) where there could be more than 8100 persons underground at least 3 mine rescue teams and at least 1 additional mine rescue team for every additional 6300 persons who could be underground;

(b) have readily available, at the mine for use by the rescue team members contemplated in regulation 16.5(1)(a), sufficient breathing apparatus that may be required in any emergency and which breathing apparatus must continually comply with SANS 50145:1997/EN 145:1997 "Respiratory protective devices - Self-contained closed-circuit breathing apparatus - Compressed oxygen or compressed oxygen-nitrogen type - Requirements, testing, marking";

(c) enter into a contract with a mines rescue service provider to coordinate and facilitate the provision of mines rescue teams and other services, relating to an emergency, on a cooperative basis; and

(d) immediately notify such mines rescue service provider should any emergency occur at the mine that may require the use of rescue team members, contemplated in 16.5(1)(a), or the use of the services of such mines rescue service provider.

16.5(2) For the purposes of regulation 16.5(1)(c) and (d), a mines rescue service provider must

(a) be an organisation/institution which has personnel with specialist knowledge and experience in mines rescue and emergencies and which has access to rescue equipment and training facilities, including facilities for Heat Tolerance Testing, Workload Testing and Simulated Training;

(b) render an emergency rescue service on a co-operative basis;

(c) provide mines rescue services with emphasis on mobilisation of mine rescue teams, quantity or access to rescue teams, emergency communication, additional emergency resources, back up facilities and transport;

(d) ensure that any breathing apparatus that may be used by mine rescue teams continually complies with SANS 50145: 1997/EN 145:1997 "Respiratory protective devices - Self-contained closed circuit breathing apparatus - Compressed oxygen or compressed oxygen-nitrogen type - Requirements, testing, marking";

(e) ensure that their personnel is competent to check and maintain any rescue equipment used by it in accordance with the Original Equipment Manufacturer's specifications;

(f) test and maintain the functional performance of any other rescue equipment used by it in accordance with the Original Equipment Manufacturer's specifications; and

(g) ensure that the rescue team members used by them to provide mines rescue services meet the qualification requirements as prescribed in Chapter 22.

16.5(3) Every mines rescue service provider, referred to in regulation 16.5(2), must-

(a) keep a register of all persons who have been found competent to practice as a rescue team member by that mines rescue service provider;

(b) implement and maintain a system to issue licences to practice to persons contemplated in 16.5(3)(a) and who meet such criteria as determined by the rescue service provider, which criteria must include at least the following-

(i) the person has not attained the age of 46 years;

(ii) the person has been declared medically fit in terms of the requirements of the mine's "Code of Practice on Minimum Standards of Fitness to Perform Work at the Mine" as may be amended from time to time. prepared in accordance with the : Guideline for the Compilation of a Mandatory Code of Practice on Minimum Standards of Fitness to Perform Work at a Mine;

(iii) the person has undergone and passed the Heat Tolerance Test, conducted in terms of Chamber of Mines of South Africa Research Organization Research Report No. 29/87 - "A guide to the selection and classification of rescue brigadesmen on the basis of Heat tolerance", initially and thereafter at intervals not exceeding 24 months;

(iv) the person has undergone refresher-training sessions as determined by the mines rescue service provider at intervals of not more than 3 months. At least 2 of these trainings per annum must be in a mine or simulated mine, in an atmosphere filled with smoke, whilst using a breathing apparatus; and

(v) the person has undergone and passed the Work Load Test, conducted in terms of the Chamber of Mines of South Africa S & TS Circular No. 39/93 dated 5 April 1993, initially and thereafter at intervals not exceeding 12 months.

(c) monitor compliance by persons, issued with a licence to practice by it, with the requirements contemplated in regulation 16.5(3)(b) and suspend or revoke any such licence if the person no longer meets any of those requirements, and re-issue a licence when the person again meets the requirements.

16.5(4) Whenever an emergency occurs at a mine that requires the deployment of mine rescue teams, the employer and any mines rescue service provider notified in terms of regulation 16.5(1)(d) and whose assistance has been requested, must take reasonable measures to ensure that the required mine rescue teams are deployed as soon as possible.

16.5(5) No employer or mines rescue service provider may allow any rescue team member contemplated in regulation 16.5(1)(a) to be deployed as a member of a mine rescue team during an emergency unless such rescue team member is in possession of a valid licence to practice, as contemplated in regulation 16.5(3) and has passed a pre-operational medical examination, determined by the mines rescue service provider, to ensure that the rescue team member is medically fit at the time to be so deployed.

(Regulation 16.5 inserted by Government Notice 86 in Government Gazette 30697 dated 1 February 2008)

Refuge bays

16.6(1) The employer of every underground mine must ensure that:

(a) readily accessible refuge bays are provided in the underground workings of the mine; and

(b) where a mine is required to have self-contained self rescuers in terms of regulation 16.2 above, such refuge bays are located within the limits of protection afforded by the self-contained self-rescuers in use at the mine, when being used.

16.6(2) The employer must take reasonably practicable measures to ensure, that having regard to the number of persons likely to be present in the area served by the refuge bay, every refuge bay complies with at least the following -

(a) is of sufficient size;

(b) is equipped with means for the sufficient supply of respirable air;

(c) is equipped with a sufficient supply of potable water;

(d) is equipped with sufficient ablution facilities;

(e) is equipped with sufficient illumination;

(f) is equipped with sufficient first aid equipment;

(g) is equipped with efficient means to communicate verbally to surface;

(h) is situated, where practicable, in an area not being used for storage of combustible material or close to such an area;

(i) is constructed in such a way that air containing noxious smoke, fumes or gases will not enter the refuge bay;

(j) a plan of the escape route is displayed in the refuge bay, indicating the position of the refuge bay in relation to the shaft or any other egress or access way to the surface;

(k) a sign is displayed in the refuge bay, setting out the emergency procedures to be followed in the refuge bay and relevant emergency phone numbers; and

(l) has a means to facilitate clear identification of the location of the refuge bay from the outside in poor visibility.

16.6(3) The employer must take reasonably practicable measures to ensure that every refuge bay is examined to ensure compliance with 16.6.(2)(a) to (l) -

(a) at least once every 30 days by a person appointed in terms of regulation 2.15.1 or 2.17.1 in force in terms of item 4 of Schedule 4 of the Act or any other employee of a higher ranking;

(b) at least once every 90 days by a person appointed in terms of section 12 of the Act, or by a person who holds the Intermediate Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa, working under the control of a person appointed in terms of section 12 of the Act.

16.6(4) The employer must take reasonably practicable measures to ensure that a written report on the inspection contemplated in regulation 16.6(3)(b) is provided within 7 days to the manager appointed in terms of section 3(1)(a).

(Regulation 16.6 added by Government Notice R906 in Government Gazette 38216 dated 21 November 2014)

CHAPTER 17
SURVEYING, MAPPING AND MINE PLANS

17(1) **DEFINITIONS**

In this Chapter, unless the context indicates otherwise-

*"**bedded mineral deposit"*** means any reef, coal seam, lode, mineral bed or fissure, which occurs conformably within its country rock and is not of a massive nature;

"chart datum"; means the Lowest Astronomical Tide in all ports of the Republic of South Africa and Namibia as determined from time to time by the Hydrographer of the South African Navy;

"competent person" for purposes of regulation 17(2)(a) means:

(a) in the case of an underground mine or a surface mine where blasting takes place, a person in possession of a Mine Surveyor's Certificate of Competency issued by the Department; or

(b) in the case of a surface mine where blasting does not take place, a person in possession of a Mine Surveyor's Certificate of Competency issued by the Department; or

a person who has passed the examination for mining legislation as is required for the Mine Surveyor's Certificate of Competency issued by the Department and who is in possession of either:

(i) an Advanced Certificate in Mine Surveying issued by the Chamber of Mines of South Africa and who has at least three (3) years practical experience in mine surveying; or

(ii) a National Diploma in Mine Surveying issued by a tertiary institution accredited by the Department of Education, or

(iii) a person who has been assessed competent against a qualification recognised by the Mining Qualification Authority for this purpose.

(c) in the case of mining at sea, a person in possession of a Mine Surveyor's Certificate of Competency issued by the Department; or

a person who has passed the examination for mining legislation as required for the Mine Surveyor's Certificate of Competency issued by the Department and who is in the possession of either:-

(i) a qualification in Hydrographic Surveying recognised by the Council for Professional and Technical Surveyors of South Africa for registration in the category of Technician; or

(ii) a person who has been assessed competent against a qualification recognised by the Mining Qualifications Authority for this purpose.

"Director: Mine Surveying" means the person appointed as such by the Department in terms of the Public Service Act of 1994;

"fixed position" means any point other than a ***survey station*** which is fixed within the relevant accuracy requirements for the class of survey concerned, and which is used for the purpose of locating details to be shown on ***plans,***

"fluid material" means any substance, excluding gas, that has a potential to flow, including water, slimes and mud;

"hazardous service" means any object, structure or installation rendering a service with a potential risk to health or safety;

"plan(s)" means any plan, section or projection required to be prepared by these regulations;

"professional geotechnical specialist" means a person who is registered with –

(a) the Engineering Council of South Africa as a Professional Civil Engineer and is registered in the sub category of Geotechnical Engineering; or

(b) the South African Council for Natural Scientific Professions as a Professional Scientist in the field of engineering geology;

"reserve land" means any piece of land over which a servitude is registered or reserved for possible registration of a servitude in respect of roads, railways, power lines, pipe lines, conveyor lines, canals, etc.;

"restricted area" means any area where mining is restricted due to significant risk;

"risk assessment" means the hazard identification and risk assessment required in terms of section 11 of the Act;

"safety pillar" means every portion of a reef, mineral deposit or ground left *in situ* for the support and protection of the surface, objects thereon or underground workings;

"sea" means the sea as defined in the National Environmental Management: Integrated Coastal Management Act 2008 (Act 24 of 2008);

"survey point" means any easily identifiable point located by localized surveying, other than a ***survey station***;

"survey station" means any point that has been surveyed within the prescribed standards of accuracy; and

"workings" means any excavation made or being made for the purpose of searching for or winning minerals or for any purpose connected therewith.

GENERAL REQUIREMENTS AT SEA AND ON LAND

APPOINTMENT OF COMPETENT PERSONS

17(2)

(a) The employer must appoint a ***competent person*** to be in charge of surveying, mapping and mine plans at the mine, and if the services of more than one ***competent person*** are engaged, ensure that their functions do not overlap. The Chief Inspector of Mines may require the appointment of more than one ***competent person*** where in his opinion such an appointment is necessary.

(b) The employer must in writing inform the Chief Inspector of Mines of the appointment of any ***competent person*** in terms of regulation 17(2)(a), and of the termination of any such appointment, within 7 days of the date of such appointment or termination. In the case of an appointment, the notification must include –

(i) the name of the competent person;

(ii) certified copies of all relevant qualifications of the competent person; and

(iii) whether the appointment of the competent person is full time or part time.

(c) In the case of an underground mine, one ***competent person*** appointed under regulation 17(2)(a) must be able to reach the mine in the case of those emergencies and within such time(s), as determined in terms of the mine's risk assessment. Such emergencies and time(s) must be included in the mine's mandatory Code of Practice for Emergency Preparedness and Response.

Appointment at two or more mines

(d) The ***competent person*** appointed at any mine by the employer under regulation 17(2)(a) may not in addition be appointed under regulation 17(2)(a) as a ***competent person*** at any other mine, except with the written permission of the Chief Inspector of Mines and subject to such terms and conditions as the Chief Inspector of Mines may determine.

Period permitted without a Competent Person

(e) The employer must take reasonable measures to ensure that no mine is worked without a ***competent person*** appointed under regulation 17(2)(a) for more than 60 days in any period of 6 consecutive months. The employer must in writing appoint a suitably qualified person to perform the functions of the ***competent person*** under this Chapter during such period of 60 days or portion thereof, as the case may be.

DUTIES AND RESPONSIBILITIES

17(3)

(a) The ***competent person*** appointed under regulation 17(2)(a), and the suitably qualified person appointed under regulation 17(2)(e) are not responsible for the accuracy of the surveying done before their appointments

(b) No person may withhold from the employer any survey records or ***plans*** prepared in terms of these regulations.

17(4) The employer must take reasonable measures to ensure, in all surveying and mapping done and all ***plans*** prepared for purposes of these regulations by the ***competent person***, that:

Units of Measure

(a) all units of measure conform to the metric system, except angular measurements which must conform to the sexagesimal system;

Survey System

(b) all mine survey systems conform to the National Control Survey System as determined by the Chief Director: Surveys and Mapping as contemplated in the Land Survey Act, Act No 8 of 1997. The projection origin may be changed to reduce the numerical values of the co-ordinates. Survey systems established on a mine prior to 1 January 1999 may be retained provided that a tabulation of the co-ordinates of at least 3 (three) ***survey stations***, in both the existing mine survey system and the National Control Survey System, are shown on every sheet comprising a ***plan***;

Datum Plane (Mining on land)

(c) elevations determined above and below ground on mines established after 12 November 2004, refer to mean sea level, based on the South African Land Levelling Datum as determined by the Chief Director: Surveys and Mapping as contemplated in the Land Survey Act, Act No 8 of 1997.

Datum Plane (Mining at sea)

(d) bathymetric elevations determined at ***sea*** refer to ***chart datum***;

Colours and Sign Conventions

(e) all ***plans*** conform to the conventional signs and colours provided by the ***Director: Mine Surveying***;

Back up and storage of Data

(f) if any ***plans*** required in terms of this Chapter are kept electronically, they are adequately backed up; and

(g) all survey records are securely stored in a dry and fire proof place when not in use.

SAFETY PRECAUTIONS

Responsibilities regarding safety precautions

17(5) The employer must take reasonable measures to ensure that the ***competent person*** referred to in regulation 17(2)(a) is at all times aware of-

(a) ***workings*** which are being advanced;

(b) surface structures or objects which may be affected by mining;

(c) ***workings*** which are being abandoned or closed down, in order to allow the final surveying thereof;

(d) all ***workings*** or any place on surface where there is, or is likely to be, a dangerous accumulation of ***fluid material***, noxious or flammable gas; and

(e) ***safety pillars*** that are being, or have been, removed.

17(6) The employer must take reasonable measures to ensure that the ***competent person*** referred to in regulation 17(2)(a) in writing notifies the employer, which notification must be dated, of any ***workings*** being advanced to come within:

(a) a horizontal distance of 100 (one hundred) metres from ***reserve land***, buildings, roads, railways, dams, waste dumps or any other structure whatsoever including structures beyond the mining boundaries, or from any surface, which it may be necessary to protect in order to prevent any significant risk.

(b) 50 (fifty) metres from any excavation, ***workings, restricted area*** or any other place where there is, or is likely to be a dangerous accumulation of ***fluid material***, noxious or flammable gas. Such notification must include a sketch plan giving the distance to such place from the nearest ***survey station***.

17(7) The employer must take reasonable measures to ensure that -

(a) no mining operations are carried out within a horizontal distance of 100 (one hundred) metres from ***reserve land***, buildings, roads, railways, dams, waste dumps, or any other structure whatsoever including such structures beyond the mining boundaries, or any surface, which it may be necessary to protect in order to prevent any significant risk, unless a lesser distance has been determined safe by ***risk assessment*** and all restrictions and conditions determined in terms of the ***risk assessment*** are complied with;

(b) ***workings*** coming within 50 (fifty) metres, from any other excavation, ***workings, restricted area*** or any other place where there is, or is likely to be a dangerous accumulation of ***fluid material***, noxious or flammable gas are mined subject to such restrictions and stopped at such positions as determined by ***risk assessment***.

(c) where ground movement, as a result of mining operations, poses significant risk, an effective ground movement monitoring system is in place.

(d) survey records and ***plans*** relating to conditions described in paragraphs (a) and (b) above, are made available to the persons doing the ***risk assessment***.

17(8) No person may erect, establish or construct any buildings, roads, railways, dams, waste dumps, ***reserve land***, excavations or any other structures whatsoever within a horizontal distance of 100 (one hundred) metres from ***workings***, unless a lesser distance has been determined safe -

(a) in the case of the employer, by ***risk assessment*** and all restrictions and conditions determined in terms of the ***risk assessment*** are complied with; or

(b) in the case of any other person, by a ***professional geotechnical specialist*** and all restrictions and conditions determined by him or her or by the Chief Inspector of Mines are complied with;

17(9) The person(s) responsible for activities in terms of regulations 17(7)(a) and 17(8) must –

(a) in the case of an employer, provide the Chief Inspector of Mines with the distance and accompanying restrictions and conditions for comment, and;

(b) in the case of other persons, provide the Chief Inspector of Mines with the distance and accompanying restrictions and conditions for approval.

17(10) No mining operations, erecting, establishment, or construction, as contemplated in regulations 17(7)(a) and 17(8) respectively, may take place until such written comment or approval, as referred to in 17(9)(a) and 17(9)(b), has been obtained.

Boundary Pillars

17(11) The employer must take reasonable measures to ensure that on the inside of every mine boundary, continuous pillars are left standing (in situ) the width of which, measured horizontally and at right angles to the boundary line, must not be less than –

(a) for underground coal mines, 15 (fifteen) metres;

(b) for all other mines, 9 (nine) metres.

17(12) The employer must take reasonable measures to ensure that no boundary pillars are worked or cut through unless written permission has been obtained from all relevant

adjacent employers and the Principal Inspector of Mines, provided that in the absence of any adjacent employer, permission need only be obtained from the Principal Inspector of Mines to work or cut through such boundary pillars.

Check Survey

17(13) Should the ***Director: Mine Surveying*** be of the view that there may be errors in any survey or plans constructed there from or where they do not conform to the standards of accuracy required by these regulations, he or she may cause a check survey to be carried out. The cost of such check survey must be borne by the employer if it is proved that there are errors in any survey or ***plans*** constructed there from, or that they do not conform to the standards of accuracy required by these regulations.

SURVEY PRACTICE ON LAND (SURFACE AND UNDERGROUND) AND AT SEA

17(14) The employer must take reasonable measures to ensure in all surveying and mapping done and all ***plans*** prepared for purposes of these regulations by the ***competent person,*** that:

Survey Stations

(a) sufficient ***survey stations*** are established, so that all surface objects and all ***workings*** can be accurately surveyed. Each ***survey station*** must be clearly marked with a unique number and recorded in a register;

Standards of Accuracy: Surface and Underground

(b) the minimum standard of accuracy and class of survey for the fixing of ***survey stations*** on both horizontal and vertical planes are in accordance with the following formula:

$$A = 0{,}015 + \frac{S}{30000}$$

where S is the distance in metres between the known and the unknown ***survey station***; provided that in the case of a traverse, after a check survey has been completed, the error in direction of a line between any two consecutive ***survey stations*** must not exceed 2 (two) minutes of arc, provided that the horizontal and vertical displacement between the measured position and final position of a ***survey station*** does not exceed 0,1 (zero comma one) metres;

(i) the allowable error for a Primary Survey (Class A) is not greater than A metres. Primary Survey means any survey carried out for the purpose of fixing shaft positions, shaft stations, underground connections, upgrading of secondary surveys to primary surveys and establishing primary surface survey control;

(ii) the allowable error for a Secondary Survey (Class B) is not greater than 1,5A metres. Secondary Survey means any survey carried out for the purpose of fixing main or access development, mine boundaries and establishing secondary surface survey control;

(iii) the allowable error for a Tertiary Survey (Class C) is not greater than 3A metres. Tertiary Survey includes ***survey stations*** established from secondary ***survey stations*** for localised survey purposes;

(iv) the allowable error for a Localised Survey is not greater than 0,2 (zero comma two) metres in addition to the allowable error at the nearest ***survey station***. Localised Survey means measurements taken from a survey network to locate surface or underground ***workings***, structures and features. This includes normal tape triangulation for month-end measurements, plugging, offsetting and tachometric work;

Accurate Representation on Plan

(v) errors in representation on ***plan*** do not exceed 0,1% (zero comma one per cent) of the denominator of the scale of the ***plan***, in addition to the allowable survey error at the nearest ***survey station*** or ***fixed position***. Where accurate surveying is not possible due to significant risks, the estimated position of affected ***workings*** or objects must be indicated on the ***plan*** by broken lines and with reasons why accurate measurements could not be made;

Standards of Accuracy at Sea

(c) all ***fixed positions*** determined at sea for the purpose of locating detail to be shown on ***plans***, comply with the standards as set out in column 1b of Table 1 in the Minimum Standards of the International Hydrography Organisation (IHO) Standards , 5th Edition, dated February 2008;

Details required on Plans

(d) the following detail is depicted on all ***plans*** where applicable -

(i) the name of the reef, lode or mineral bed;

(ii) planes of sections or planes of ***plans***,

(iii) a subject heading indicating the name of the mine and the name of the ***plan***,

(iv) the name and signature of the ***competent person*** for purposes of regulation 17(2)(a) against the relevant date of updating;

(v) the identification number allotted by authorities;

(vi) the survey system and co-ordinates of origin used;

(vii) a north point;

(viii) the scale of the ***plan***,

(ix) a legend illustrating colours and conventional signs not provided for by the ***Director: Mine Surveying***;

(x) co-ordinate lines sufficient in number for the scale of the ***plan*** to be verified;

(xi) in the case of mining at sea, also geographic co-ordinates of the centre point of the sheet (longitude and latitude);

(xii) in the case of mining at sea, also the relationship between the South African Land Levelling Datum and the latest ***chart datum*** determined;

Material and Size of the Plans

(e) all ***plans*** are drawn on durable transparent draughting material on sheets of a size not greater than AO as defined by the International Organisation for Standardisation. The ***Director: Mine Surveying*** may request in the case of ***plans*** produced by means of computer aided draughting (CAD), that such ***plans*** be produced on suitable draughting material;

Scale of Plans - Land

(f) all ***plans*** are drawn to a scale of 1:1 500 in the case of a coal mine, and 1:1000 in the case of any other mine, unless specifically provided otherwise in these regulations;

Scale of Plans - Sea

(g) in the case of mining at ***sea***, the general ***plan*** referred to in regulation 17(25) is drawn to a legible scale;

Plans to be Kept Up to Date

(h) ***plans*** are at all times correct to within 12 (twelve) months, except for the ***plans*** showing the ***workings*** which must at all times be correct to within 3 (three) months. In the case of offshore prospecting and mining, ***plans*** must at all times be correct to within 6 (six) months;

Inventory of Plans

(j) an inventory of all ***plans*** and all copies called for in terms of regulation 17(26) is kept, showing the following details -

(A) the name of the mine;

(B) the name and number of the ***plan***;

(C) the date of the last updating of the ***plan*** and the name of the ***competent person*** for purposes of regulation 17(2)(a);

(D) the relevant details where a ***plan*** has been superseded; and

Superseded Plans

(k) when a ***plan*** or sheet is superseded by another ***plan*** or sheet, the old and the new ***plan*** are referenced accordingly.

RESPONSIBILITY FOR MINE PLANS

17(15) The employer must take reasonable measures to ensure that the ***competent person*** referred to in regulation 17(2)(a) –

(a) constructs accurate ***plans*****,** as contemplated in regulations 17(16) to 17(25), which are readily available to the employer. Such ***plans*** must cover all ***restricted areas*** and the areas where the surface infrastructure and ***workings*** occur; and

(b) determines the accuracy of any ***plan*** or drawing which was not prepared by him or her, where any inaccuracy on any such ***plan*** or drawing may create a risk of endangering the health or safety of any persons.

PLANS TO BE KEPT

Index Key Plan

17(16) A legible index key ***plan***, showing the areas covered by the relevant ***plan*** sheets, the mine boundaries and the farm names and boundaries within and adjacent to the mine, or this detail may be shown on every ***plan*** sheet as an inset key ***plan*** drawn to a legible scale.

Surface Plan

17(17) A ***plan*** of the surface showing the boundaries of the mining area, names of adjacent mining areas, the primary surface ***survey stations***, outcrops and dips of the mineral deposits, perimeters of all surface mining, shafts, openings, rescue boreholes, subsidence or cavities, areas of restricted mining affecting the surface, any ***hazardous services*** whether on surface or buried and every surface object, structure or ***reserve land*** which requires protection against mining.

Surface Contour Plan

17(18) A surface contour ***plan*** showing relevant mine and farm boundaries, original surface contours, boreholes and watercourses.

Mine Ventilation and Rescue Plan

17(19) At every underground mine, a ventilation and rescue ***plan*** of the ***workings***, taking into consideration the requirements of regulation 17(22), drawn to a legible scale and depicting the ventilation districts, the direction of air currents, the quantity of air circulating in such ventilation district, the position of each permanent fan, door, regulator, crossing, stopping, telephone, refuge bay, rope-aided or normal escape route, safe place, first aid room, main water valve, fire fighting equipment site, emergency power source and any area sealed off for fire or spontaneous combustion.

(a) A square grid, lettered horizontally and numbered vertically, drawn to a suitable scale must be shown on the ***plan*** contemplated in regulation 17(19).

(b) The information relating to the ventilation aspects of the ***plan*** in sub regulation (19) must be provided by the person authorised by the employer to do so and must be certified as accurate on the ***plan*** by that person.

(c) An updated hard copy of the ***plan*** contemplated in regulation 17(19) must be immediately available at the mine for rescue operation purposes. In the case of a coal mine, an updated hard copy must be submitted to the Principal Inspector of Mines at intervals not exceeding 3 (three) months.

Mine Residue Deposit Plans

17(20) ***Plans*** (including sections) showing mine residue deposits containing ***fluid material***.

Geological Plan

17(21) A ***plan***, drawn to a legible scale, depicting geological features that could affect mining, or these features may be shown on the ***plan(s)*** referred to in regulation 17(22).

Plans of the Workings

17(22) ***Plans*** of the ***workings*** showing the following: boundaries of the mining area; names of adjacent mining areas; outlines and dips of the ***workings***, date of measurement on the excavated side of the outline of the workings, heights representative of ***workings***, ***survey stations***; relevant ***survey points***; areas in which mining has been restricted or prohibited; dams; explosives magazines; lines indicating the planes of sections; faults; dykes and any containment wall or any explosion proof seal, showing the designed static pressure in Kilo Pascal (kPa) of such walls and seals.

(a) In the case of underground mines:

(i) Where a ***bedded mineral deposit*** has an average inclination to the horizontal of more than 60° (sixty degrees), a *plan* showing the projection of the ***workings*** onto a vertical plane parallel to the average strike.

(ii) Where multiple ***bedded mineral deposits*** overlie each other, the ***workings*** thereof must be shown on separate ***plans***.

(iii) Where a massive or irregular ore body is worked, level ***plans*** and vertical sections through the ***workings*** must be kept.

(b) In the case of surface mines:

(i) Where ***bedded mineral deposits*** are worked by surface mining methods, there must be shown on the surface ***plan*** sufficient data regarding the thickness and elevation of every mineral deposit worked in a suitable grid pattern. As an alternative to the grid pattern data, vertical sections may be kept, the lines of which must be indicated on the surface plan.

(ii) Where massive or irregular deposits are worked, level ***plans*** or vertical sections or a composite ***plan*** showing all the bench outlines, must be kept.

Level Plans

17(23) Level ***plans*** must show the outline of all ***workings*** at suitably chosen elevations. In the case of underground mines, the detail required in regulation 17(22) must be shown.

General Plan - Mining on Land

17(24) A general ***plan*** showing the detail required in regulations 17(17), 17(18) and 17(22)(a) on one ***plan*** instead of on three separate ***plans***, or a general surface ***plan*** showing the detail required in regulations 17(17) and 17(18) on one ***plan*** instead of two separate ***plans***, may be constructed.

General Plan — Mining at Sea

17(25) A general ***plan*** showing the boundaries of the mining area, the names of adjacent mining areas, bathymetric contours, dates of mining and the locality of semi permanent production rigs and platforms.

Departmental copies of plans

17(26) The employer must provide the Principal Inspector of Mines annually with updated copies of the ***plans***. In the case of computer aided draughting (CAD), legible ***plans*** in book form (approximately A3 size) or a copy of the index key ***plan*** referred to in regulation 17(16), indicating additionally the outlines of the ***workings*** as well as the surface infrastructure, and a copy of the back-up referred to in regulation 17(4)(f) must be provided.

Unsatisfactory Plans

17(27) Where in the opinion of the ***Director: Mine Surveying plans*** are deficient, he or she may have the mine surveyed and new ***plans*** prepared at the expense of the employer,

Plans Confidential

17(28) The Principal Inspector of Mines and the ***Director: Mine Surveying*** must keep information contained in any ***plan*** confidential and may only release such information in accordance with the Promotion of Access to Information Act (Act 2 of 2000).

MINE CLOSURE

Plans brought Up to Date

17(29) The employer must take reasonable measures to ensure that, before a mine is abandoned, closed or rendered inaccessible, -

(a) the ***plans*** and departmental copies thereof referred to in regulation 17(26) are brought up to date by the ***competent person*** referred to in regulation 17(2)(a) and that the ***Director: Mine Surveying*** is notified to inspect such ***plans*** and the copies thereof for approval; and

(b) where the surface has been disturbed by mining, a rehabilitation ***plan*** is drawn, to a legible scale, showing the final surface contours and established water courses and that the ***Director: Mine Surveying*** is notified to inspect such ***plan*** for approval.

Plans and Books to be handed in

17(30) The employer must take reasonable measures to ensure that updated hard copies of the ***plans***, copies referred to in regulation 17(26) and inventories thereof on durable draughting material, together with the ***survey station*** register are handed in at the office of the ***Director: Mine Surveying***, following the inspection and approval of the ***plans*** as contemplated in regulation 17(29).

Updating of Surface Plans

17(31) The employer must take reasonable measures to ensure, where rehabilitation is completed after cessation of mining, that the surface and rehabilitation ***plans*** contemplated in regulations 17(17) or (24) and (29)(b) are updated upon such completion.

Certificate of compliance

17(32) The **Director: Mine Surveying** must issue a certificate of compliance with the requirements of regulations 17(29) and 17(31) to the employer within 60 (sixty) calendar days of compliance in respect of the said regulations.

(Chapter 17 inserted by the Schedule in Government Notice R1304 in Government Gazette 26963 dated 12 November 2004)

(Chapter 17 amended by GN R89 in Government Gazette 30698 dated 1 February 2008)

(Chapter 17 substituted by Government Notice R447 in Government Gazette 34308 dated 27 May 2011)

CHAPTER 18
TRIPARTITE INSTITUTIONS

Nomination of members to represent employees and owners

18.1(1) Nominations for the appointment of members of every tripartite institution are invited by notice in the *Gazette* from-

(a) every registered trade union with employees as members to represent employees, and

(b) every employers' organisation with owners as members to represent owners.

[18.1 (1)-Section 98 (1) (zC) empowers the Minister to make regulations for the appointment of members to the Council.]

[18.1 (1)-Section 98 (zD) empowers the Minister to make regulations for the appointment of members to the Mining Qualifications Authority.]

[18.1 (1)-Schedule 2 allows for the nomination and appointment of members to tripartite institutions. Nomination of members to represent employees and owners]

18.1(2) Every nomination must be submitted in writing within 30 days of the notice referred to in subregulation (1) and must contain-

(a) the name, address and a short curriculum vitae of the nominee;

(b) the tripartite institution for which the person is nominated;

(c) if submitted by-

(i) a registered trade union, a statement of the number of employees who are members of the union; or

(ii) an employer's organisation, a statement of the number of employees employed by the members of the organisation; and

(d) any other information or documentation required in the notice.

18.1(3) Any registered trade union or employer's organisation that has submitted a nomination must, within 15 days of receiving a request from the Minister, provide such further information or documentation as the Minister may reasonably request regarding such

nomination, including but not limited to information or documentation necessary to verify a statement contemplated in subregulation (2).

18.1(4) The nomination period referred to in subregulation (2) may be extended.

Appointment of members representing employees

18.2 The Minister must appoint persons, nominated under regulation 18.1 (2) to represent employees as members of tripartite institutions so that-

(a) the members are all nominated by agreement between registered trade unions representing at least 75% of employees belonging to such trade unions in the mining industry; or

(b) failing agreement in terms of paragraph (a)-

(i) at least half the members are persons nominated by a registered trade union or unions representing the majority of employees belonging to registered trade unions in the mining industry; and

(ii) the rest are persons nominated by registered trade unions with members employed in the mining industry and appointed in accordance with the significance in the mining industry of the trade unions concerned.

Appointment of members representing owners

18.3 The Minister, must appoint persons, nominated under regulation 18.1 (2) to represent owners in the mining industry, as members of tripartite institutions so that-

(a) the members are all nominated by agreement between employers' organisations whose members employ at least 75% of employees in the mining industry; or

(b) failing agreement in terms of paragraph (a)-

(i) at least half the members are persons nominated by an employer's organisation or organisations whose members employ the majority of the employees in the mining industry; and

(ii) the rest are persons nominated by employers' organisations and appointed in accordance with the significance in the mining industry of the organisations concerned.

Appointment of members representing departments of State

18.4 The Minister, after consulting the Chief Inspector, must appoint the members representing departments of the State on every tripartite institutions *[sic]*.

Term of office of members

18.5(1) A member of a tripartite institution is appointed for a period of three years.

18.5(2) Despite subregulation (1), a person appointed to replace a member of a tripartite institution who has vacated office before the expiry of such member's term of office, is appointed for the remainder of that member's term of office.

18.5(3) Every member of a tripartite institution is eligible for reappointment after the expiry of such member's term of office.

18.5(4) If for any reason a person to replace a member of a tripartite institution is not appointed at the expiry of the period of office of such member, the Minister may extend the period of office of such member for a period not exceeding six months.

Filling of casual vacancies

18.6(1) If a member vacates office in terms of the Constitution of the tripartite institution before the expiry of such member's terms of office, subject to subregulation (2)-

(a) the party that nominated the member is invited to nominate a replacement; and

(b) the Minister must appoint the person nominated as a member of the tripartite institution concerned.

[18.6(1)-Section 97 (3) empowers the Minister, after consulting the Council to add to this Act, Schedule 5 containing the constitution of the Council and its permanent committees.]

18.6(2) If the party contemplated in subregulation (1) (a) no longer satisfies the representative requirements of regulation 18.2 or 18.3-

(a) nominations of persons to fill the vacancy are invited in terms of regulation 18.1; and

(b) the Minister must appoint a person to fill the vacancy in terms of regulation 18.2 or 18.3.

18.6(3) If a member representing a department of the State on a tripartite institution vacates office before the expiry of such member's term of office, a person must be appointed to fill the vacancy in terms of regulation 18.4.

Publication of names of members

18.7 The names of persons appointed in terms of these regulations, their period of office and the parties who they represent are published by notice in the *Gazette*.

CHAPTER 20
DEFINITIONS

20. In these regulations a word or phrase to which a meaning has been assigned in this Act has that meaning and, unless the context otherwise indicates-

"**Audiogram**" means a chart, graph or table indicating the hearing threshold levels of an individual as a function of frequency (viz. 0.5, 1, 2, 3, 4, 6 and 8 kilohertz), as determined during a measurement of a person's hearing threshold levels by means of monaural, pure-tone, air-conduction threshold tests;

(Definition of "Audiogram" inserted by the Schedule of Government Notice R786 in Government Gazette 23498 dated 14 June 2002)

"***braking system***" means a device or combination of devices capable of reducing the speed of a ***locomotive*** or ***train*** to a standstill including emergency brake, park brake and service brake;

(Definition of "braking system" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"**Cardio-respiratory examination**" means a clinical examination of the cardio-respiratory system including a full size chest x-ray and a lung function test.

(Definition of "Cardio-respiratory examination" inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

"***dynamic type test***" means the test conducted on a ***train*** to determine the deceleration rate and braking efficiency;

(Definition of "dynamic type test" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"**Full size chest x-ray**" means a chest x-ray using a photographic plate measuring 35cm x 35 cm or 35 cm x 42 cm or the digital equivalent;

(Definition of "Full size chest x-ray" inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

"***locomotive***" means a self-propelled railbound machine which requires either a driver for manual operation or an operator for automatic operation;

(Definition of "locomotive" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"**Lung function test**" means the measurement of the inspired and expired volume of air by means of a spirometry;

(Definition of "Lung function test" inserted by the Schedule in Government Notice R1792 in Government Gazette 25812 dated 12 December 2003)

"Principal Inspector of Mines" means the officer appointed by the Chief Inspector to be in charge of health and safety in any region established by Government Notice No. R. 92 of 15 January 1997; and

"***rolling stock***" means any railbound equipment that is not self-propelled;

(Definition of "rolling stock" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"***static test***" means the test carried out to determine the compliance of the brake holding power of a ***locomotive braking system*** measured against the design specification or an appropriate safety standard;

(Definition of "static test" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"train" means one or more ***locomotive***s and ***rolling stock***, all attached.

(Definition of "train" inserted by the Schedule in Government Notice R583 in Government Gazette 26333 dated 14 May 2004.)

"tripartite institution" means the Council and its permanent committees and the Mining Qualifications Authority.

(Chapter 20 substituted by regulation 4 of Government Notice R846 in Government Gazette 18078 dated 21 June 1997)

CHAPTER 21
FORMS

(Please note that a copy of the listed forms will be provided upon request. Kindly refer to our website for our contact details.)

FORM	***DESCRIPTION***
DME 132 (SAMRASS 1)	*ACCIDENT AND DANGEROUS OCCURRENCE REPORT*
DME 200 (SAMRASS 2)	*INJURY REPORT FORM*

DME 136 (SAMRASS 3)	*ROCKBURST AND FALL OF GROUND ACCIDENT*
DME 201 (SAMRASS 4)	*1 – 13 DAY INJURIES*
DME 133 (SAMRASS 5)	*EXPLOSIVES*
DME 134 (SAMRASS 6)	*FIRE*
DME 135 (SAMRASS 7)	*SUBSIDENCES (COAL MINES)*
DME 137 (SAMRASS 8)	*HEAT STROKE / HEAT EXHAUSTION QUESTIONNAIRE*
DME 202 (SAMRASS 9)	*REPORT ON DATE RESUMED WORK*

(Chapter 21, forms SAMRASS 1 – 9, inserted by the Schedule of Government Notice R134 in Government Gazette 22055 dated 9 February 2001)

Report Form 21.9(2)(a)	*Airborne Pollutants – Particulates Personal Exposure Report Form*
Report Form 21.9(2)(b)	*Airborne Pollutants – Gases and Vapours Personal Exposure Report Form*
Report Form 21.9(2)(c)	*Heat Stress Exposure Report Form*
Report Form 21.9(2)(d)	*Cold Stress Exposure Report Form*
Report Form 21.9(2)(e)	*Personal Noise Exposure Report Form*
Report Form 21.9(2)(f)	*Operations Details Report Form*

(Forms 21.9(2)(a) – (d) inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)
(Forms 21.9(2)(a) – d) amended and Forms 21.9(2)(e) and (f) inserted by regulation 3 of Government Notice R1226 in Government Gazette 28333 dated 15 December 2005)

Form DMR 231	*Health Incident Report (HIR)*

(Form DMR 231 added by Government Notice R702 in Government Gazette 37980 dated 12 September 2014)
(Form DMR 231 substituted by Government Notice R906 in Government Gazette 38216 dated 21 November 2014)

CHAPTER 22
SCHEDULES

COMPETENT PERSON FOR PRIMARY BLASTING, SECONDARY BLASTING AND BLASTING ASSISTANTS

COMPETENT PERSON FOR EXPLOSIVES

22.4.1(1) For purposes of:

1. Regulation 4.4(1) "competent person" means a person who is in charge of workmen in a working place at the mine and who is the holder of a certificate or qualification recognised by the Department for this purpose, valid for the class of mine to which the mine belongs.

2. Regulation 4.4(3) "competent person" means a person who:

   (a) has been assessed and found competent against a skills programme recognised by the MQA for this purpose; or

(b)

(i) is qualified by virtue of his/her knowledge, training, skills and experience to perform the activities contemplated in regulation 4.4(3);

(ii) is familiar with the provisions of regulation 4 which apply to the work to be performed by the person; and

(iii) has been trained to recognise any potential or actual danger to health or safety that may arise from the work to be performed by the person.

(Chapter 22.4 inserted by Government Notice R1279 in Government Gazette 29458 dated 15 December 2006)

(Chapter 22.4 substituted by Government Notice R584 of 2015 with effect from 10 October 2015)

Machinery and Equipment

22.8.6(4) For purposes of regulation 8.6(4) the competent person means a person who is a certificated electrical or mechanical engineer or has an appropriate qualification registered on the National Qualifications Framework and recognised by the Mining Qualifications Authority for this purpose.

(Regulation 22.8.6(4) inserted by the Schedule in Government Notice 911 in Government Gazette 29214 dated 8 September 2006)

22.8.7(2) The competent person referred to in regulation 8.7(2) means a person who-

(i) is a certificated electrical or mechanical engineer or has an appropriate qualification registered on the National Qualifications Framework and which is recognized by the MQA for this purpose;

(ii) is familiar with the type of refrigeration and air conditioning plants used at the mine in so far it concerns aspects of safety, construction, erection, operation, inspection and testing of such plants, and

(iii) is familiar with any relevant national or international Standards, Codes of Practice and specifications related to the type of refrigeration, and air conditioning plants used at the mine.

(Regulation 22.8.7(2) inserted by the Schedule in Government Notice 911 in Government Gazette 29214 dated 8 September 2006)

22.8.10 Hazardous Location

22.8.10.1 The competent person referred to in regulation 8.10.1 means a person who –

(i) is the holder of a Certificate of Competency for mechanical or electrical engineering issued by the Chief Inspector of Mines and has knowledge and experience in the design, construction and maintenance of equipment in the Hazardous Location and is conversant with the relevant SANS Standards; or

(ii) has been assessed competent against a qualification recognised by the MQA this purpose.

22.8.10.2 The competent person referred to in regulation 8.10.2(f) means a person who –

(i)

(a) is in possession of an Electrician Trade certificate issued by the Department of Labour under the Manpower Training Act or who has been assessed competent against a skills programme or qualification recognised for this purpose by the Mining Qualifications Authority;

(b) has the experience in the design, construction, installation, operation and maintenance of the type of electrical apparatus used in a hazardous location on which he is required to work at the mine; and

(c) is conversant with the relevant SANS Standards referred to in the regulations; or

(ii) has been assessed competent against a qualification recognised by the MQA this purpose.

22.8.10.3 The competent person referred to in regulation 8.10.2(n) means a person who -

(i)

(a) is in possession of Diesel Mechanic Trade certificate issued by the Department of Labour under the Manpower Training Act or who has been assessed competent against a skills programme or qualification recognised for this purpose by the Mining Qualification Authority;

(b) has the experience in the design, construction, installation, operation and maintenance of type of diesel equipment on which he is required to work at a mine; and

(c) is conversant with the relevant SANS Standards referred to in the regulations; or

(ii) been assessed competent against a qualification recognised by the MQA this purpose.

(Regulation 22.8.10 inserted by Government Notice R1068 in Government Gazette 33763 dated 19 November 2010)

22.8.13 VESSELS UNDER PRESSURE

22.8.13 The competent person[1] referred to in regulation 8.13(9), 8.13(11), 8.13.(17) means a person –

1.1 who is the holder of a Certificate of Competency for Mechanical or Electrical Engineers (Mines and Works) issued by the Department; or

1.2 who has been assessed competent against a qualification, skills programme or unit standards recognised by the Mining Qualification Authority for this purpose; or

1.3 who is the holder of a valid certificate of registration: "Competent Person Pressure Vessels" issued by the South African Qualification and Certification Committee for competent persons (pressure vessels and boilers).

(Regulation 22.8.13 inserted by Government Notice R1068 in Government Gazette 33763 dated 19 November 2010)

22.9(2) OCCUPATIONAL HYGIENE

22.9(2)

(a) OCCUPATIONAL EXPOSURE LIMITS FOR AIRBORNE POLLUTANTS

In this Schedule the following terms/abbreviations have the meanings as set out below.

TERMS

"**Asbestos**" means any of the following minerals: - Crocidolite, Amosite, Chrysotile, Fibrous actinolite, Fibrous anthophyllite, Fibrous tremolite, and any mixture containing any of these minerals.

"**Occupational exposure limit" (OEL)** means the time weighted average concentration for a 8 hour work day and a 40 hour work week to which nearly all workers may be repeatedly exposed without adverse health effects.

"**Occupational exposure limit - Ceiling limit" (OEL - C)** means an instantaneous value which must never be exceeded during any part of the working exposure.

"**Occupational exposure limit - Short term exposure limit" (OEL-STEL)** means a 15-minute TWA exposure which should not be exceeded at any time during a workday even if the 8-hour TWA is within the OEL-TWA. Exposures above the OEL-TWA up to the STEL should not be longer than 15 minutes and should not occur more than four times per day. There should be at least 60 minutes between successive exposures in this range. An averaging period other than 15 minutes may be recommended when this is warranted by observed biological effects.

For those substances for which no OEL-STEL have been specified, excluding airborne particulates, a figure of three times the occupational exposure limit is to be used when controlling short-term excursions in exposure.

"**Respirable particulates**" means the respirable fraction of airborne particulates.

"**Inhalable particulates**" means airborne particulates as collected by a personal gravimetric sampler without particle size selection.

ABBREVIATIONS

CAS	=	Chemical Abstracts Service is an organisation under the American Chemical Society. CAS Numbers are used to identify specific chemicals or mixtures.
ppm	=	parts per million
mg/m^3	=	milligrams per cubic metre
Sk	=	Skin absorption
Sen	=	Capable of causing respiratory sensitisation
f/ml	=	fibres per millilitre

2006 OCCUPATIONAL EXPOSURE LIMITS FOR AIRBORNE POLLUTANTS

Tabulation shows inhalable particulates unless indicated to be respirable

(Please note that a copy of the above Table will be provided upon request. Kindly refer to our website for our contact details.)

(Table substituted by regulation 2 of Government Notice R989 in Government Gazette 29276, dated 5 October 2006)

22.9(2)

(b) OCCUPATIONAL EXPOSURE LIMITS FOR PHYSICAL AGENTS

(i) NOISE

(1)	Noise Exposure	:	85 $dBL_{Aeq, 8h}$
(2)	Peak Sound Level	:	135 dB(A)

(ii) THERMAL STRESSES

(1)	Wet Bulb (°C)	:	32.5
(2)	Dry Bulb (°C)	:	37

(3) Mean Radiant Temperature (°C) : 37

(4) Equivalent Chill Temperature (°C) : 4

22.9(2)(c) POTABLE WATER

(i) QUALITY

POTABLE WATER QUALITY	PHYSICAL REQUIREMENTS	CHEMICAL REQUIREMENTS	CONDUCTIVITY REQUIREMENTS
Allowable Limit	Odour} And } Not to be Taste } objectionable	pH 5.5 min 9.5 max	
Recommended Limit	Turbidity 1 (NTU) Colour 20 mg/l of Platinum	pH 6.0 min 9.0 max	70 ms/m
Maximum Allowable Limit	Turbidity 5 (NTU) Colour not specified		
Maximum Limit			300 ms/m

(NTU) = Expressed in Nephelometric turbidity units

(ii) Macro, Micro Determinants and Bacteriological Limits

DETERMINANTS	Formula	MAXIMUM ALLOWABLE LIMIT
Macro Determinants		mg/l
Total hardness	$CaCO_3$	650
Magnesium	Mg	100
Sodium	Na	400
Chloride	Cl	600
Sulphate	SO_4	600
Nitrate + nitrite	N	10
Fluoride	F	1.5
Zinc	Zn	5.0
Micro Determinants		µg/l
Arsenic	As	300
Cadmium	Cd	20
Copper	Cu	1000
Cyanide	CN	300
Iron	Fe	1000
Lead	Pb	100
Manganese	Mn	1000
Mercury	Hg	10
Phenolic Compounds	Phenol	10
Selenium	Se	50
Bacteriological Limits		
Total coliform bacteria count		5 per 100 ml
Faecal coliform bacteria count		NIL per 100 ml
Standard plate count		Not specified

(iii) Other Constituents

The water shall not contain any other constituents in concentrations, which may render it unsuitable for use as drinking water.

(Regulation 22.9(2) inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

22.10.2 Water Storage and Pumping

22.10.2(2)

(a) Competent Person[1]

For purposes of regulation 10.2(2)(a) the competent person[1] means a person who is registered as a professional engineer with the Engineering Council of South Africa and is competent in the design of underground dam walls, plugs and barricades.

(Regulation 22.10.2(2)(a) inserted by Government Notice R94 in Government Gazette 30698 dated 1 February 2008)

22.10.4(2)

(b) Competent Person[2]

For the purpose of regulation 10.2(2)(b) and (c) competent person[2] means a person who-

(a) is the holder of a Certificate of Competency for mechanical or electrical engineering issued by the Chief inspector of Mines and has knowledge and experience in the design, construction and maintenance of dams and plugs; or

(b) has been assessed competent against a qualification recognised by the MQA for this purpose.

(Regulation 22.10.4(2)(b) (should be 22.10.2(2)(b)) inserted by Government Notice R94 in Government Gazette 30698 dated 1 February 2008)

22.10.3 Draw Points, Tipping Points, Rock Passes and Box Fronts

22.10.3(1)

(a) The competent person referred to in regulation 10.3(1)(a) means a person who is registered with the Engineering Council of South Africa as a professional engineer or professional technologist or who has been assessed competent against a qualification recognised by the Mining Qualification Authority for this purpose.

22.10(3)(2)

(a) The competent person referred to in regulation 10.3(2)(a) means a person who is the holder of a Certificate of Competency for Mechanical or Electrical Engineers (Mines and Works) issued by the Department or who has been assessed competent against a qualification recognised

(Regulation 22.10.3 inserted by Government Notice R94 in Government Gazette 30698 dated 1 February 2008)

22.10.3 Water Storage and Pumping

22.10.3.1 The "competent person [1]" referred to in 10.3(2)(a) means a person who is registered as a professional engineer with the Engineering Council of South Africa.

22.10.3.2 The "competent person[2]" referred to in regulations 8.10.(2)(b) and (c) means a person who –

(a) is the holder of a Certificate of Competency for mechanical or electrical engineering issued by the Chief Inspector of Mines and has knowledge and experience in the design, construction and maintenance of dams and plugs; and

(b) has been assessed competent against a qualification recognised by the MQA for this purpose.

(Second Regulation 22.10.3 added by Government Notice R1068 in Government Gazette 33763 dated 19 November 2010)

22.10.4 Draw Points, Tipping Points, Rock Passes and Box Fronts

22.10(4)(1)

(a) The "competent person[1]" referred to in regulation 10.4(1)(a) means a person who:

(a) is registered with the Engineering Council of South Africa as a professional engineer or professional technologist; or

(b) has been assessed competent against a qualification recognised by the Mining Qualification Authority for this purpose.

22.10.4(2)

(b) The "competent person[2]" referred to in regulation 10.4(2)(b) means a person who:

(a) is the holder of a Certificate of Competency for Mechanical or Electrical Engineers (Mines and Works) issued by the Department; or

(b) who has been assessed competent against a qualification recognised.

(Regulation 22.10.4 added by Government Notice R1068 in Government Gazette 33763 dated 19 November 2010)

22.14.1

22.14.1(1) For the purpose of regulations 14.1.1, 14.1.5 and 14.1.7, a competent person means a person who-

(a) is in possession of a valid certificate of competency, recognised for this purpose by the Mining Qualifications Authority; or

(b) has been assessed competent against a unit standard, skills programme or qualification, recognised for this purpose by the Mining Qualifications Authority.

(Regulation 22.14.1(1) substituted by regulation 1 of Government Notice R886 in Government Gazette 25097 dated 20 June 2003)

(Regulation 22.14.1(1) substituted by regulation 1 of Government Notice 34 in Government Gazette 29544 dated 19 January 2007)

22.14.1(7) …….

(Regulation 22.14.1(7) substituted by regulation 2 of Government Notice R886 in Government Gazette 25097 dated 20 June 2003)

(Regulation 22.14.1(7) deleted by regulation 2 of Government Notice 34 in Government Gazette 29544 dated 19 January 2007)

22.14.1(8) For purposes of Regulation 14.1(8) competent person means a person who is at least in possession of either the Chamber of Mines Certificate in Rock Mechanics (Metalliferous Mines), or the Chamber of Mines Certificate in Rock Mechanics (Coal Mines), whichever is appropriate for the type of mine concerned.

(Regulation 22.14.1(1), (7) and (8) inserted by the Schedule of Government Notice R959 in Government Gazette 23615 dated 12 July 2002, and shall come into effect on 1 January 2003.)

22.15(5)

(a) The competent person referred to in regulations 5.1(1) must be in possession of the following-

(i) Where the competent person performs the obligations underground:

(1) Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa.

(ii) Where the competent person performs the obligations on surface:

(1) Intermediate Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa, and be certified as an Occupational Hygienist by the Southern African Institute for Occupational Hygiene;

or

(2) Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa.

(Regulation 22.15(5) inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

22.15(8)

(a) The competent person referred to in regulation 8.2(6) must be in possession of the following:

(i) An Electrical or Mechanical Certificate of Competency for Mines and Works issued by the Chief Inspector of Mines;

(ii) A B degree in Electrical or Mechanical Engineering.

(Regulation 22.15.8(a) inserted by Government Notice R583 in Government Gazette 26333 dated 14 May 2004)

22.15(9)

(a) The competent person referred to in regulations 9.2(3) must be in possession of the following-

(i) Where the competent person performs the obligations underground:

(1) Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa.

(ii) Where the competent person performs the obligations on surface:

(1) Intermediate Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa, and be certified as an Occupational Hygienist by the Southern African Institute for Occupational Hygiene;

(2) Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa.

(Regulation 22.15(9) inserted by the Schedule of Government Notice R904 in Government Gazette 23583 dated 2 July 2002)

22.15(11)

(a) "Competent person" for purposes of sub-regulation 11.4(3) means:

(i) A person registered with the Health Professions Council in any of the following three categories:

(a) as an ear, nose and throat specialist;

(b) in speech therapy and audiology; or

(c) as an occupational medical practitioner; or

(ii) A person qualified in audiometric techniques from an institution registered with the relevant Education and Training Quality Assurer (ETQA) registered in terms of the South African Qualifications Authority Act (Act No. 58 of 1995.

(b) "Competent person" for purposes of sub-regulations 11.4(7) and 11.4(8) means

(i) A person registered as an audiologist with the Health Professions Council.

(Regulation 22.15(11) inserted by the Schedule of Government Notice R786 in Government Gazette 23498 dated 14 June 2002)

22.15(16)

(a) For purposes of Regulation 16.5(1)(a), competent person means a person who-

(i) has passed a course of training approved for this purpose by the Chief Inspector of Mines;

OR

(ii) has been assessed and found competent against applicable unit standards, skills programme and/or a qualification recognised for this purpose by the Mining Qualifications Authority (MQA).

(Regulation 22.15(16)(a) inserted by Government Notice 86 in Government Gazette 30697 dated 1 February 2008)

TECHNICAL COMPETENCIES

Electrical

22.16.3.1 Design of electrical apparatuses:

The competent person referred to in regulation 3.1(1); means a person who is registered with the Engineering Council of South Africa as a professional engineer and who by virtue of his or her knowledge and experience is competent to design, select and approve electrical systems and instalations *[sic]*.

Control of electrical apparatuses

22.16.3.2 The competent person referred to in regulation 3.1(2), 3.3.2 means:

(a) where the only power supply to the mine is a single phase power supply at a ***domestic voltage***, this person is a person who:

(i) is in possession of an installation electrician certificate issued by the Department of Labour under the Manpower Training Act or who has been assessed competent against a skills programme or qualification recognised for this purpose by the Mining Qualifications Authority; and

(ii) has at least two years post qualification experience in the construction, installation, operation and maintenance of the type of electrical apparatus and reticulation systems on which he or she is required to work at the mine.

(b) notwithstanding 1.1, where a multi phase power supply of ***low voltage*** is supplied to a mine (even if single phase power is used at some parts of the mine) this person is a person who:

(i) is in possession of an installation electrician certificate issued by the Department of Labour under the Manpower Training Act or who has been assessed competent against a skills programme or qualification recognised for this purpose by the Mining Qualifications Authority; and

(ii) has at least two years post qualification experience in the construction, installation, operation and maintenance of the type of electrical apparatus and reticulation systems on which he is required to work at the mine.

(c) notwithstanding 1:1 and 1.2, where power supplies above ***low voltage*** is supplied to a mine (even if ***domestic*** or ***low voltage*** power is used at some parts of the mine), this person is a person who:

(i) is the holder of a Certificate of Competency for Mechanical or Electrical engineer issued by the Department of Mineral Resources and who by virtue of his knowledge and experience is competent in the construction and installation of electrical apparatuses and reticulation systems: or

(ii) has been assessed competent against a qualification recognised for this purpose by the Mining Qualifications Authority.

Installation, repairs and maintenance of electrical apparatuses

22.16.3 The competent person referred to in regulation 3.1.3 means a person who has:

Qualifications under the Skills Development Act, Act No. 97 of 1998 as:

a) an electrician or millwright; or

b) a competency or competencies recognised by the Mining Qualification Authority for these purposes and has at least two years post qualification experience in the construction, installation, operation and maintenance of the type of electrical apparatus and reticulation systems on which he or she is required to work at the mine.

22.16.4 Energise, de-energise or isolation of electrical apparatuses

The competent person referred to in regulation 3.3.3 means a person or persons, who collectively hold the following:

Qualifications under the Skills Development Act, Act No. 97 of 1998 as:

a) an electrician or millwright; or

b) a competency or competencies recognised by the Mining Qualification Authority for these purposes and has at least two years post qualification experience in the construction, installation, operation and maintenance of the type of electrical apparatus and reticulation systems on which he or she is required to work on at the mine.

c) has, attended a skills programme recognised by the Mining Qualifications Authority for this purpose; and

d) has two years experience in doing switching on **medium voltage apparatuses**.

(Regulation 22.16 inserted by Government Notice R330 in Government Gazette 38708 dated 24 April 2015)

CHAPTER 23

REPORTING OF ACCIDENTS AND DANGEROUS OCCURENCES *[sic]*

(Heading of Chapter 23 substituted by Item 1 of the Schedule in Government Notice R787 in Government Gazette 23498 dated 14 June 2002)

ACCIDENTS TO BE REPORTED

23.1 The employer must report to the Principal Inspector of Mines in the manner prescribed in this chapter any accident at the mine that results in:

(a) the death of any employee;

(b) an injury, to any employee, likely to be fatal;

(c) unconsciousness, incapacitation from heatstroke or heat exhaustion, oxygen deficiency, the inhalation of fumes or poisonous gas, or electric shock or electric burn accidents of or by any employee and which is not reportable in terms of paragraph (d).

(d) an injury which either incapacitates the injured employee from performing that employee's normal or a similar occupation for a period totaling 14 days or more, or which causes the injured employee to suffer the loss of a joint, or a part of a joint, or sustain a permanent disability,

(e) an injury, other than injuries referred to in paragraph (d), which incapacitates the injured employee from performing that employee's normal or a similar occupation on the next calendar day.

23.2(1) An accident referred to in paragraph (a), (b) or (c) of regulation 23.1 must be reported immediately by the quickest means available and must be confirmed without delay on Forms SAMRASS 1 and 2 prescribed in Chapter 21.

23.2(2) An accident referred to in paragraph (d) of regulation 23.1 must, after the accident becomes reportable, be reported within three days on Forms SAMRASS 1 and 2 prescribed in Chapter 21.

23.2(3) The Form SAMRASS 9 must be submitted on a monthly basis for all persons not having returned to work at the time of submitting SAMRASS 2 on a monthly basis.

23.2(4) An accident referred to in paragraph (e) of regulation 23.1 must be reported without delay on a monthly basis, on Form SAMRASS 4 prescribed in Chapter 21.

23.3(1) Where the death of an employee, referred to in regulation 23.1(a) is related to a rockburst or fall of ground, the duly completed Form SAMRASS 3, prescribed in Chapter 21, for such rockburst or fall of ground must be forwarded by the employer to the Principal Inspector of Mines within 14 days of such death.

23.3(2) When an injury results in the death of the injured employee after the report in terms of regulation 23.1 (b), (c), (d) or (e) has been given or when a slight injury, which was not reportable, results in the death of the injured employee, or when general sepsis or tetanus develops as a result of an injury, the employer must immediately report it to the

Principal Inspector of Mines and without delay submit amended Form SAMRASS 1 prescribed in Chapter 21.

23.3(3) Where the injury of a person referred to in regulation 23 (1) or a dangerous occurrence referred to in regulation 23.4(o), is related to the use of explosives, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 5, prescribed in Chapter 21, must be forwarded by the employer to the Principal Inspector of Mines within 14 days of such occurrence.

23.3(4) Where the injury of a person referred to in regulation 23 (1) or a dangerous occurrence referred to in regulation 23.4 (f) is related to fires, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 6, prescribed in Chapter 21, must be forwarded by the employer to the Principal Inspector of Mines within 14 days of such occurrence.

23.3(5) Where the injury of a person referred to in regulation 23 (1) or a dangerous occurrence referred to in regulation 23.4 (b) is related to a subsidence in a coal mine, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 7, prescribed in Chapter 21, must be forwarded by the employer to the Principal Inspector of Mines within 14 days of such occurrence.

23.3(6) Where the injury of a person referred to in regulation 23 (1) is related to heat stroke or heat exhaustion, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 8, prescribed in Chapter 21, must be forwarded by the employer to the Principal Inspector of Mines within 14 days of such occurrence.

DANGEROUS OCCURRENCES TO BE REPORTED

23.4 The employer must report to the Principal Inspector of Mines in the manner prescribed in this Chapter any of the following dangerous occurrences at the mine-

(a) ROCKBURSTS AND FALLS OF GROUND

An extensive rockburst or fall of ground causing the following damage underground –

(i) At least 10 linear metres of working face has been severely damaged and choked and will require re-establishment and re-supporting, or be abandoned;

(ii) At least 25m^2 of working area has been severely damaged and choked rendering support units ineffectual and will have to be re-established and re-supported or be abandoned;

(iii) At least 10 linear metres of gully has been restricted with rock clearly recently displaced from the hanging wall and gully sidewalls;

(iv) At least 10 linear metres continuous or 30 linear metres cumulative of access ways of tunnel or travelling way has been severely damaged and will require rehabilitation or be abandoned;

(v) At least $10m^2$ of roof or $5m^3$ of rock has been displaced from the roof of the mining cavity or excavation;

(vi) At least $10m^3$ of rock has been freshly displaced from pillars or tunnel sidewalls.

(b) CAVING

Any unplanned or uncontrolled caving, side wall or slope failure or subsidence in the ground or workings, causing damage to the surface, which may pose a significant risk to the safety of persons at a mine.

(c) FLOW OF WATER, BROKEN ROCK, MUD OR SLIMES

Any unplanned or uncontrolled flow of water, broken rock, mud or slimes at the mine which may pose a significant risk to the safety of persons.

(Regulation 23.4(c) amended by regulation 1 of Government Notice 783 in Government Gazette 26496 dated 2 July 2004)

(d) BREAKDOWN OF MAIN VENTILATION FAN

Breakdown of any main ventilation fan.

(e) POWER FAILURE

Any power failure occurring in the underground workings of a mine, which poses a significant risk to the health, or safety of persons at a mine.

(f) FIRES AND EXPLOSIONS

Any ignition or explosion of gas or dust, or any fire related to mining activities or any indication or recrudescence of fire or spontaneous combustion at or in a mine.

(g) FLAMMABLE GAS

The presence of flammable gas exceeding one comma four parts per hundred by volume in the general atmosphere at a mine, or any portion of a mine:

(i) if such flammable gas is detected for the first time; or

(ii) the first time such flammable gas is again detected after not having been detected therein for a continuous period of three months.

(h) WINDING PLANTS

(i) Running out of control of winding-engine, winding drum or conveyance;

(ii) Fracture or failure of any essential part of the winding-engine, fracture or failure of any safety device used in connection with the winding equipment;

(iii) Fracture, failure or serious distortion of winding rope, fracture, failure or serious distortion of any connection between the winding rope and the drum or between the winding rope and the conveyance and any other load suspended from or attached to such rope; fracture, failure or failure or serious distortion of any connection between conveyances or between a conveyance and any suspended or attached load, fracture of guide rope or its connections, fracture of balance or tail rope or its connections;

(Regulation 23.4(h)(iii) amended by Item 2 of the Schedule in Government Notice R787 in Government Gazette 23498 dated 14 June 2002)

(iv) Fracture or failure of winding or balance sheave; fracture or failure of any essential part of the headgear or other sheave support;

(v) Jamming or accidental overturning of conveyance; conveyance or its load fouling shaft equipment; jamming of crosshead;

(vi) Derailing of conveyance;

(vii) Conveyance, bridle, frame or crosshead accidentally leaving guides;

(viii) Fracture or failure of the ***braking system*** or of any critical parts thereof;

(ix) Failure to activate when required of any safety catches and/or arresting devices or activation of any safety catches and/or arresting devices when not required;

(x) Failure to activate when required of any overwinding prevention device or activation of such device when not required;

(xi) Any overwind or over-run of the conveyance to an extent which may have endangered persons or may have caused damage to the winding equipment;

(xii) Failure of depth indicator.

(i) LIFTS AND ELEVATORS

(i) Fracture or failure of any essential part of the driving or operating machinery, fracture or failure of any safety device used in connection with lifts or elevators.

(ii) Fracture or distortion of the lift or elevator rope, fracture or failure of attachments of such rope.

(iii) Fracture or failure of any sheave or of the shaft or shaft bearing of such sheave.

(iv) Jamming of car or counterpoise.

(v) Fracture or failure of ***braking system*** or of any critical parts thereof.

(vi) Failure to activate when required of any safety catches and/or arresting devices or activation of any safety catches and/or arresting devices when not required.

(j) OBJECTS FALLING DOWN SHAFTS

Any object falling down the shaft or any other incident which necessitates the inspection of the shaft.

(k) EMERGENCY OR RESCUE PROCEDURES

(i) Any failure of breathing apparatus whilst deployed.

(ii) The use of emergency escape apparatus, procedures or rescue mechanisms, or the rescue from entrapment, associated with mining or related activities, of any employee.

(l) SELF PROPELLED MOBILE MACHINERY

Any self-propelled mobile machine running out of control which may pose significant risk to the safety of persons at a mine.

(m) BOILERS AND PRESSURE VESSELS

Fracture or failure of any part of a boiler or safety device of a boiler or pressure vessel which may have endangered persons.

(n) CHAIRLIFTS

(i) Fracture or failure of any part or safety device of a chairlift installation which may have endangered persons or may have caused damage to such chairlift installation.

(ii) Fracture or failure of any essential part of the driving machinery.

(iii) Fracture failure or serious distortion of any rope or chain forming part of a chairlift installation.

(o) EXPLOSIVES

(i) Any unauthorised or accidental ignition or detonation of explosives.

(ii) Any exposure of persons to blasting fumes which is not reportable in terms of regulation 23.1.

(iii) Any detonation of explosives which may pose a significant risk to the safety of persons.

23.5 A dangerous occurrence referred to in regulation 23.4 must be reported immediately by the quickest means available and must be confirmed without delay on Form SAMRASS 1 prescribed in Chapter 21.

23.6 Every employer must ensure that a system is in place whereby the employer is informed, as soon as is practicable after its occurrence, of any accident or dangerous occurrence, which is reportable in terms of this Chapter.

23.7

(i) Every employer must keep and maintain a record in which the particulars of all accidents and dangerous occurrences, which are required to be reported in terms of this Chapter, must be recorded without delay.

(ii) The record contemplated in Regulation 23.7(i) in respect of all accidents or dangerous occurrences must be kept and maintained for two years from the time that the accident or dangerous occurrence becomes reportable.

(Regulation 23.7(iii) renumbered to 23.7(ii) by Item 3 of the Schedule in Government Notice R787 in Government Gazette 23498 dated 14 June 2002)

(Chapter 23 inserted by the Schedule of Government Notice R134 in Government Gazette 22055 dated 9 February 2001)