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AIDS HELPLINE: 0800-0123-22 Prevention is the cure

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GOVERNMENT NOTICES GOEWERMENSKENNISGEWINGS

DEPARTMENT OF LABOUR DEPARTEMENT VAN ARBEID

No. R. 10

11 January 2002

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)

DIVING REGULATIONS, 2001

The Minister of Labour has, under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

SCHEDULE

Definitions

1 In these Regulations, any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context otherwise indicates—

"air" includes normal compressed air;

"approved inspection authority" means an inspection authority approved by the chief inspector for the verification, surveillance and certification of the design, manufacture, testing, inspection and repair of compression chambers and bells;

"bail-out system" means an independent supply of the appropriate breathing mixture carried and activated by the diver, which is of sufficient capacity to allow the diver to reach a place of safety in emergency situations;

"bell" means a compartment, either at ambient pressure (open bell) or pressurised (closed bell), by means of which a diver can be transported to and from the underwater work site, which allows the diver access to the surrounding environment and which is capable of being used as a refuge during diving operations;

"bottom time" means the time in minutes which elapses from the time when the diver dives from the surface of the water towards the underwater working place until such time as he

or she commences his or her ascent from the underwater working place towards the surface of the water;

"breathing mixture" means air or gas which is safe for breathing at ambient pressure;

"buddy line" means a line not exceeding five metres in length, which has a breaking strength of at least five hundred Newton and which is used for securely connecting two divers to each other during a dive;

"class I saturation diver " means a class II surface-supplied mixed gas diver who has been trained in all aspects of mixed gas, saturation and bell diving to a depth of at least one hundred metres;

"class II surface-supplied mixed gas diver" means a class II surface-supplied air diver trained in all aspects of mixed gas diving using surface-supplied diving equipment with open bell and diving stage, limited by decompression tables utilised (non-saturation dive), to depths not exceeding seventy metres;

"class II surface-supplied air diver" means a class III surface-supplied air diver trained in all aspects of air diving using scuba and surface-supplied diving equipment, wet bell, stage and surface decompression procedures to a depth not exceeding fifty metres;

"class III surface-supplied nitrox diver" means a class III surface-supplied air diver trained in all aspects of nitrox diving using surface-supplied diving equipment to a depth not exceeding thirty metres, without the use of a surface compression chamber;

"class III surface-supplied air diver" means a class IV scuba air diver trained in all aspects of air diving using scuba and surface-supplied diving equipment to a depth not exceeding thirty metres, without the use of a surface compression chamber;

"class IV scuba nitrox diver" means a class IV scuba air diver trained in all aspects of nitrox diving using scuba to a depth not exceeding thirty metres, without the use of a surface compression chamber;

"class IV scuba air diver" means a class IV scuba air diver trained in all aspects of air diving using scuba to a depth not exceeding thirty metres, without the use of a surface compression chamber;

"compression chamber" means a pressure vessel for human occupation having internal dimensions sufficient to accommodate at least one diver lying in a horizontal position as well as one other person, and which allows the ingress and egress of personnel while the occupants are under pressure;

"compression chamber dive" means the simulation of an actual dive to specific depths by using a compression chamber;

"Council" means the Council for Diving established in terms of regulation 11 of these Regulations;

"decompression stop" means a pause, calculated with the aid of decompression tables, which must be observed at a specific depth below the surface of the water during a diver's ascent from the underwater working place, in order to release excess nitrogen or other inert gases absorbed by his or her body, and for a compression chamber dive it has a corresponding meaning;

"designated medical practitioner" means a registered medical practitioner designated in terms of regulation 4 of these Regulations to establish whether divers are fit to dive;

"dive" means every dive performed by divers from the control point on the surface of the water to any point under the surface of the water and back to the control point;

"diver" means any person registered as a diver in accordance with the provisions of regulation 14 of these Regulations and includes a diving supervisor;

"diver's logbook" means the logbook in the form set out in Annexure A to these Regulations;

"diving apparatus" means any type of diving equipment that can assist a person to take part in any diving operation, which excludes snorkel type apparatus;

"diving mode" means a dive requiring scuba air, scuba nitrox, surface-supplied air, surface-supplied mixed gas or saturation diving apparatus, with related procedures and techniques;

"diving operation" means all activities of a diving team in preparation for, during and after a dive;

"diving operations record" means the record contemplated in Annexure B to these Regulations;

"diving stage" means a suspended platform designed to carry one or more divers and used for lowering divers into the water and bringing them to the surface when underwater decompression is undertaken or standard diving dress is used;

"diving supervisor" means any person registered as a diving supervisor in terms of regulation 15 of these Regulations;

"diving team" means the divers, standby divers, and diver support personnel involved in a diving operation, including the diving supervisor, line attendant, life-support technician and such other persons as are necessary to man any machinery and equipment which may be required before, during and after a dive;

"diving time" means the time in minutes which elapses from the time when a diver dives from the surface of the water until he or she is again exposed to atmospheric pressure after a dive and includes all decompression stops;

"gas" means any pure gas or mixture of gases, other than air, suitable for underwater breathing;

"hookah" means diving equipment comprising of an air supply, air line, diver safety harness, demand regulator or full face mask which may be used only by scientific, archaeological and shellfish divers, limited to a maximum depth of fifteen metres;

"in-date diver" means a learner diver or diver who is the holder of a valid medical certificate of fitness certifying that he or she is fit to dive, and whom, subsequent to the date of issue thereof and with intervals of not more than six months, has successfully participated in an in-water diving operation of not less than half an hour duration;

"learner diver" means any person registered as a learner diver in terms of regulation 13 of these Regulations;

"life-line" means a line or something similar, at least eight millimetres in diameter and with a minimum breaking strength of five kN, one end of which is fastened at the control point on the surface of the water and the other end of which is secured to the diver during a dive;

"life-support technician" means a person trained in the physics, physiology, medical and technical aspects of supporting life in high-pressure environments;

"line attendant" means a person who has been trained in the use of diving signals, and life-lines, and were required service telephone and other cables;

"medical certificate of fitness" means a certificate issued by a designated medical practitioner in terms of regulation 4 of these Regulations;

"medical examination" means a medical examination of a diver or a learner diver conducted by a designated medical practitioner;

"nitrox" means a mixture of oxygen and nitrogen where the percentage of oxygen in the mixture is greater than that of normal air and does not exceed a partial pressure of 1.6 atmospheres absolute of oxygen at any given time;

"provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations published under Government Notice No.R.1449 of 6 September 1996;

"SANOP96A" means the South African Naval Operational Publication number 96A;

"saturation dive" means a dive executed by a diver whose tissues are saturated with the inert gas in the breathing mixture so as to allow an extension of bottom time without additional decompression;

"scuba" means self-contained underwater breathing apparatus in which the supply of breathing mixture carried by the diver is independent of any other source;

"shot line" means a line of at least fifteen millimetres in diameter, one end of which is fastened at the control point on the surface of the water and which extends to the underwater working place where the other end is fastened or anchored and along which the diver must dive to the underwater working place and again return to the surface of the water;

"standard diving dress" means a heavyweight surface-supplied diving outfit for deep diving;

"standby diver" means an in-date diver, other than a learner diver, who is fully qualified and prepared to dive immediately to the maximum depth required by the particular diving operation with the aid of the diving equipment in use, and who is not prevented from diving by an excess of inert gas in his or her system;

"surface control panel" means a panel used to control diving operations which supplies and indicates by separate pressure gauges the independent primary and secondary gas supplies;

"surface-supplied diving equipment" means diving equipment which includes a bail-out system, a full body diver safety harness, an underwater voice communication system, a surface control panel, an umbilical cord and a full-face mask or helmet in which the supply of suitable breathing mixture is dependant on a continuous supply from the surface of the water;

"the Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"umbilical cord" means a life support line, comprising of a gas supply, pneumofathom meter, and communicator's cable which has a strength equivalent to or greater than that of a life line;

"under water voice communication system" means an under water voice communication system that must allow the diver direct voice contact with the supervisor on the surface and *vice versa*;

"warning signal" means, by day, flag A as defined in the International Code of Signals and by night, the lights as defined in the International Regulations for Preventing Collision at Sea, 1983.

Scope of application

2. (1) Subject to subregulation (2), these Regulations shall apply to all diving operations and all persons engaged in diving operations in the Republic of South Africa or the territorial waters thereof: Provided that all diving operations performed by the South African National Defence Force in terms of SANOP96A and all persons involved in those operations, shall be deemed to have complied with these Regulations.

(2) These Regulations shall not apply to persons who—

- (a) use no diving apparatus;
- (b) are engaged in diving other than as employees at work;
- (c) are engaged in recreation diving activities; or
- (d) are medical personnel who have to take part in compression chamber dives for the purpose of therapeutic treatment.

Training of divers

3. (1) No person shall train another person to dive unless he or she has been approved as a diving school in terms of subregulation (2).

(2) Any person who has at his or her disposal such staff, plant, equipment and other ancillary facilities as to enable him or her to offer the curriculum of instruction and training for learner divers framed by the chief inspector, may apply in writing to the chief inspector for approval as a diving school to train learner divers and the chief inspector may approve such application subject to such conditions as he or she may impose.

(3) A learner diver shall—

- (a) undergo underwater diving training for the periods prescribed in subregulation (5) and in accordance with the curriculum of training framed by the chief inspector;
- (b) be under the personal supervision of a diving supervisor and whilst diving be accompanied by a person registered as a diver in terms of regulation 14 of

these Regulations: Provided that if the diving supervisor is satisfied that the learner diver is sufficiently experienced, the learner diver may be permitted to undertake dives, unaccompanied, to a diving depth of not more than ten metres, or deeper than ten metres if attached to a life-line.

(4) A diving supervisor shall ensure that every learner diver, within twenty four hours of completion of a dive performed by him or her, enters full particulars of such dive in his or her diver's logbook and signs the entry, where after the diving supervisor must countersign the entry.

(5) A learner diver shall undergo underwater diving training of not less than—

- (a) fifteen hours' bottom time, to depths not exceeding thirty metres, so as to qualify for registration as a class IV scuba air diver;
- (b) five hours' bottom time, using nitrox gas, additional training to a class IV scuba air diver, to depths not exceeding thirty metres, so as to qualify for registration as a class IV scuba nitrox diver;
- (c) twenty hours' bottom time, to depths not exceeding thirty metres, so as to qualify for registration as a class III surface-supplied air diver;
- (d) seven hours' bottom time additional training, using nitrox gas, to a class III surface-supplied air diver, to depths not exceeding thirty metres, so as to qualify for registration as a class III surface-supplied nitrox diver;
- (e) thirty five hours' bottom time, to depths not exceeding fifty metres, so as to qualify for registration as a class II surface-supplied air diver; and
- (f) ten hours' bottom time additional training to a class II surface-supplied air diver, to depths greater than thirty metres but not exceeding seventy metres, with the use of an open bell and diving stage, so as to qualify for registration as a class II surface-supplied mixed gas diver.

(6) No person shall be trained as a class I saturation diver unless he or she has since his or her registration as a class II surface-supplied air diver spent at least fifty hours of bottom time in diving operations, at least fifteen hours of which were spent at depths greater than thirty metres.

(7) To qualify for registration as a class I saturation diver, a diver shall undergo underwater diving training of not less than fifty hours' bottom time at depths at least one hundred metres below the surface.

(8) No person shall be registered as a class I saturation, class II surface-supplied mixed gas, class II surface-supplied air, class III surface-supplied air, class IV scuba nitrox or class IV scuba air diver, unless he or she has attained a satisfactory standard of competence in respect of the additional matters set out in Annexure C to these Regulations.

Designated medical practitioners, medical examinations and medical certificates of fitness

4. (1) The chief inspector may designate medical practitioners to undertake the medical examination of divers or prospective divers: Provided that only medical practitioners who are registered with the Health Professions Council of South Africa and who have completed a course in underwater medicine recognized by the chief inspector, shall be designated.

(2) A designation in terms of subregulation (1) shall lapse after a period of four years, unless the designated medical practitioner concerned furnishes proof before the expiry of such period that he or she has completed a refresher course in underwater medicine recognised by the chief inspector.

(3) A designated medical practitioner shall, if so requested—

- (a) carry out a medical examination, including such tests as are required by the chief inspector, and
- (b) issue a medical certificate of fitness to the diver or learner diver based on the results of the medical examination or endorse such certificate subsequent to each medical re-examination prescribed in subregulation (4).

(4) A diver shall report for a medical examination to a designated medical practitioner at least once every twelve months and the designated medical practitioner shall examine the diver in respect of such aspects as are required by the chief inspector: Provided that when an examination of a specialised nature is required, the designated medical practitioner need not personally perform such examination.

(5) A medical certificate of fitness shall indicate—

- (a) the name and identity number of the person to whom it relates;
- (b) the date of the medical examination;
- (c) the date of any X-ray photograph taken for the purpose of the examination;
- (d) whether the person is considered fit to dive;
- (e) any limitation on the diving or compression for which the person is considered fit;
- (f) the period, not exceeding twelve months, for which the person is considered fit;
- (g) the name, address, telephone number and Health Professions Council of South Africa registration number of the designated medical practitioner issuing the certificate, as well as the year in which he or she last attended a course in underwater medicine;
- (h) the signature of the medical practitioner issuing the certificate.

(6) If, on account of indisposition or injury, a diver has been unfit to dive for a period of fourteen days or more, he or she shall not again participate in diving and no person shall require or permit him or her to participate in diving unless he or she furnishes the employer with a medical certificate indicating the nature of his or her indisposition or injury and in which a medical practitioner certifies that he or she has recovered from such indisposition or injury: Provided that if in the opinion of the diving supervisor the indisposition or injury of a diver is of such a nature as to make an examination by a designated medical practitioner desirable, such diver shall not participate in diving work until a designated medical practitioner has certified that he or she is again fit for diving.

(7) Where the medical examination of a diver is required in terms of this regulation his or her employer shall be responsible for the arrangements and costs connected with such examination: Provided that such employer shall not be responsible in respect of examinations regarding indisposition or injuries not sustained during the execution of the diver's normal duties.

(8) If a medical certificate of fitness is lost or destroyed, the learner diver or diver concerned shall resubmit him or herself for a medical examination in terms of sub-regulation (3).

Diving supervisor

5. (1) Unless an employer is a diving supervisor and personally takes charge of all diving operations performed by him or her, he or she shall in writing designate one or more persons to exercise control of his or her diving operations and ensure that the provisions of these Regulations are complied with.

(2) A person designated in terms of subregulation (1) shall be a diving supervisor: Provided that an employer may, for such reason and for such period as may be approved beforehand by an inspector, designate a diver in writing to act as a diving supervisor.

(3) A diving supervisor or person designated in terms of subregulation (2) shall—

- (a) at all times be available to deal with emergencies at the site where diving operations are carried out;
- (b) not dive while he or she is supervising other divers;
- (c) if another supervisor is not available when he or she has to dive for purposes of inspection and planning, ensure that an experienced diver acts as supervisor for the duration of the dive; and
- (d) not act as standby diver unless another supervisor is available to take charge of the diving operation: Provided that he or she may act as standby diver for diving operations undertaken to a depth of not more than thirty metres or for dives not requiring decompression stops.

Operations manual

6. (1) An employer shall, after consultation with the employees, ensure that an operations manual is compiled and made available to each diving team at the diving location before the commencement of each diving operation.

(2) An operations manual shall contain directions regarding the health and safety of employees, including—

- (a) the assignments and responsibilities of each member of the diving team for each diving mode used;
- (b) safety procedures and checklists for each diving mode used;

- (c) procedures and checklists for the use, checking and maintenance of equipment for each diving mode used;
- (d) emergency procedures in the case of—
 - (i) fire;
 - (ii) equipment failure; and
 - (iii) adverse changes in environmental conditions;
- (e) procedures for—
 - (i) emergency signalling;
 - (ii) emergency assistance under water and on the surface;
 - (iii) decompression, including therapeutic recompression and decompression, and the availability of a compression chamber for such purposes;
 - (iv) first-aid;
 - (v) obtaining medical assistance, with specific reference to the need for consultation with a designated medical practitioner if decompression sickness should occur;
 - (vi) calling for assistance from emergency services, including advance liaison with those services where appropriate;
 - (vii) emergency evacuation of the work site; and
 - (viii) the provision of emergency supplies.

Control of diving operations

7. (1) Prior to commencing diving operations, an employer shall ensure that—

- (a) a risk assessment and a hazard identification is conducted to identify the risks and hazards to the health and safety of any person taking part in a diving operation;
- (b) the personnel necessary for rendering assistance to a diver, as well as those members of the personnel who may be required in the case of an emergency, are on standby and that all equipment which may be required for use in the case of an emergency is ready for immediate use;
- (c) persons who have been trained to operate compression chambers take charge of such chambers and remain on duty while such chambers are in use and are available while diving operations are in progress;

- (d) a diver who participates in a dive is provided with all the necessary diving equipment in order to safeguard his or her health and safety;
 - (e) a diver who participates in a dive is, according to his or her logbook, qualified to use the diving equipment concerned ;
 - (f) all diving equipment used for any diving operation is checked and tested before use by the diving team so as to determine whether it is in good working order;
 - (g) the maximum bottom time of a dive, the decompression schedule and the technique to be used in any diving operation are made known to and are understood by the diving team;
 - (h) the diving team has systematically and thoroughly been informed and trained with regard to the procedures to be followed in the case of an emergency; and
 - (i) when diving operations are undertaken, sufficient stored quantities of medical oxygen is available at the dive site so that an emergency may be dealt with effectively.
- (2) During the performance of diving operations, an employer shall ensure that—
- (a) good discipline is continuously maintained and that diving operations are carried out safely and strictly in accordance with the manner planned by the diving supervisor and that the bottom time and decompression schedule referred to in subregulation (1)(g) are strictly adhered to;
 - (b) for each diving operation at least the persons as per Annexure D to these Regulations are present, together with the standby diver who shall be in immediate readiness to dive and whom shall remain on duty at the control point on the surface of the water during the diving operation: Provided that where two divers are in the water at the same time and near enough to each other to communicate with and render assistance to each other in an emergency, the one may be deemed to be a standby diver for the other: Provided further that where a diving bell is used, the standby diver (bellman) shall descend in the bell to the depth from which work is carried out and shall remain in the bell so as to be able to immediately render assistance to the diver working from the bell;

- (c) for any dive there is—
 - (i) at least one person who is qualified and has a valid first aid certificate to render first-aid and who has a thorough knowledge of the first-aid treatment to be applied and the use of all equipment used in drowning, decompression sickness and other ailments associated with diving operations; and
 - (ii) a person who is qualified as a life-support technician when saturation or closed bell dives are undertaken;
- (d) only in-date divers participate in diving;
- (e) no diver who on account of indisposition or physical or mental infirmity considers him or herself unfit to participate in diving, or who is considered unfit therefor by the diving supervisor, participates in any diving or is permitted or required to participate in any diving;
- (f) when scuba diving is performed, life-lines, buddy lines and surface markers are used, unless both the diving supervisor and the diver considers the use thereof hazardous or impracticable at the dive location, after which they may dispense with the use thereof: Provided that an underwater voice communication systems is then used, except in the case of the standby diver, when a life-line shall be used: Provided further that in the case of divers breathing gas mixtures containing helium a speech processing system shall be used;
- (g) a shot line is used when the diver is not lowered to the underwater working place by means of a diving bell, unless the use of a shot line is impracticable;
- (h) all voice communications must be recorded and the recordings must be kept for a period of at least forty eight hours and be made available to an inspector for inspection purposes;
- (i) for diving at a depth exceeding fifty metres, a diving stage is used, except when a bell is provided: Provided that a bell shall be used for all diving operations at a depth exceeding seventy metres, except when a diver uses standard diving dress or dives in a physically confined space: Provided further that a closed bell shall be used for all diving operations at a depth exceeding one hundred metres;
- (j) no diver undertakes a dive—

- (i) in contravention of any condition or restriction imposed on him or her in terms of these Regulations; and
 - (ii) unless he or she is fully conversant with such machinery and the use of such tools and equipment as may be required in the performance of his or her work at the underwater working place;
- (k) no diver undertakes a dive to a depth greater than that for which the equipment he or she is using is suitable;
- (l) no diver dives to a depth greater than that for which he or she is qualified: Provided that a class III surface-supplied nitrox diver, class III surface-supplied air diver, class IV scuba nitrox diver and class IV scuba air diver may undertake dives to a depth not exceeding fifty metres if the decompression time does not exceed twenty minutes;
- (m) no diver uses air or nitrox for any diving operation at a depth exceeding fifty metres, except where such use is for therapeutic or training purposes in a compression chamber;
- (n) for all diving modes, a sufficient supply of the appropriate breathing mixture is readily available at the required pressure to provide for all the activities of the diving team for the duration of the diving operation, excluding the divers' bail-out cylinder;
- (o) all reasonable steps are taken to ensure that air supplies to divers are pure and that such air complies with the requirements of the South African Bureau of Standards' Code of Practice for Portable Metal Containers for Compressed Gases No. 019-1985;
- (p) where a diving operation is to be carried out at night—
 - (i) a lamp or other device is attached to the diver to indicate his or her position when he or she is on the surface, and
 - (ii) the place on the surface or the bell from which the diving is carried out, is illuminated: Provided that where such illumination is undesirable, it may be switched off during the diving operation;
- (q) depth measuring devices must be used by all divers: Provided that where surface-supplied diving equipment is used the depth of the diver must be monitored by pneumofathom meters from the surface;
- (r) a diving operations record is kept as contemplated in Annexure B to these Regulations and is completed within twenty four hours of completion of the

- diving operation, and is made available to an inspector on request and kept for a minimum of two years after the last entry;
- (s) every diver, within twenty four hours of completion of a dive, enters full particulars of the dive in his or her diver's logbook as contemplated in Annexure A to these Regulations and that the entry is signed by the diver and countersigned by the diving supervisor;
 - (t) the appropriate warning signals are given and the appropriate signs are prominently displayed while diving is in progress;
 - (u) a boat is kept readily available for rescue purposes if the possibility exists that the diver may surface away from the control point in the course of a dive; and
 - (v) all other reasonable safety measures are taken which may be necessary for the safe execution of any particular diving operation and that the safety measures are strictly adhered to.

Decompression

8. (1) An employer shall ensure that no matches, cigarette lighters, smoking requisites or any other flammable articles likely to cause a fire or explosion are at any time taken into or stored in the compression chambers.

(2) No employer shall require or permit any diver in his or her employ to perform a dive, and no diver shall perform a dive, unless decompression is carried out in accordance with the techniques, decompression tables and decompression times determined by the diving supervisor.

(3) An employer shall ensure that a complete copy of the decompression tables contemplated in subregulation (2), together with the relevant explanatory procedures, is available for the information of the diving team on the site where diving operations are being performed: Provided that abstracts from the decompression tables may be made available for the information of the diving team and that the employer shall produce the appropriate identifiable decompression tables when required to do so by an inspector.

(4) Subject to regulation 8 of the General Administrative Regulations published under Government Notice No.R.1449 on 6 September 1996, an employer shall ensure that a

record, which shall be open for inspection by an inspector, is kept of all incidents of decompression illness and shall ensure that all such cases are investigated.

Compression chambers and bells

9. (1) No person shall use, order or permit the use of any compression chamber or bell unless—

- (a) it has been designed and manufactured in accordance with the health and safety standard incorporated into these Regulations in terms of section 44 of the Act;
- (b) it has been manufactured under the supervision of an approved inspection authority; and
- (c) he or she is in possession of a certificate of manufacture issued by the manufacturer in which it is certified that the compression chamber or bell has been designed, manufactured and tested in every respect in accordance with the standard contemplated in subregulation (1)(a): Provided that such certificate of manufacture shall be countersigned by the approved inspection authority as evidence that the design of such vessel has been manufactured, tested and verified in accordance with the relevant standard.

(2) An employer shall ensure that every compression chamber—

- (a) has an uncontaminated supply of breathing mixture, sufficient for one complete therapeutic compression treatment, available in storage cylinders or other suitable vessels at the compression chamber;
- (b) is equipped with pressure relief devices which are set so as to prevent the internal pressure in any compartment from rising in excess of ten percent above the maximum intended working pressure and which are designed to automatically close when the internal pressure returns to the intended working pressure after pressure relief;
- (c) is equipped with a breathing point for each occupant for ready use during a compression operation, as well as suitable means for avoiding oxygen build-up in the chamber;
- (d) is provided with portholes of sufficient size to enable everyone in the chamber to be observed from outside;

- (e) is equipped for adequate humidity control, heating, cooling and illumination of the interior;
- (f) is equipped with the necessary valves, gauges and other fittings which indicate and control the internal pressures of each compartment from outside the chamber;
- (g) is provided with a two-way oral communication system between persons outside and inside the chamber;
- (h) is designed to limit the risk of fire and equipped to extinguish a fire in the interior;
- (i) has a minimum design pressure rating of six hundred kPa for diving operations not exceeding a depth of ninety metres: Provided that for diving operations in excess of ninety metres, the design pressure rating of the compression chamber shall be equivalent to the maximum depth of the diving operation: Provided further that where a closed diving bell is used which is equipped to undergo recompression at the surface equivalent to the depth of the diving operation, the minimum design pressure rating of the compression chamber shall be six hundred kPa;
- (j) is designed to prevent opening under pressure and, where necessary, is equipped with interlocks for this purpose;
- (k) is equipped for operating all installed locking devices from both sides of a closed hatch;
- (l) is so designed that, where a closed bell is used, a person can be transferred under pressure from the compression chamber to the bell and from the bell to the compression chamber; and
- (m) is fitted with adequate equipment and reserve facilities to supply and maintain the correct breathing mixture to everyone inside the chamber.

(3) An employer shall ensure that every closed diving bell—

- (a) is equipped in such a manner that a diver is able to enter and leave it without difficulty;
- (b) is equipped with doors that act as pressure seals and that may be opened from either side;
- (c) is equipped with such valves, gauges and other fittings made of suitable materials as are necessary to indicate and control the pressure within the

- bell and to indicate to the occupants and to the diving supervisor the external pressure on the bell;
- (d) is fitted with equipment and reserve facilities which are adequate for supplying the correct breathing mixture to persons inside or working from the bell;
 - (e) is fitted with an oral communication system which enables contact to be maintained between a diver who leaves the bell, a person remaining in it and the place on the surface from which the diving operation is carried out;
 - (f) is fitted with equipment for lighting and heating the bell;
 - (g) contains adequate first-aid facilities and is fitted with lifting equipment by which an unconscious or injured diver can be hoisted into the bell by a person inside the bell;
 - (h) is equipped in such a manner that—
 - (i) it can send signals through the water for speedy location in an emergency; and
 - (ii) the lives of persons trapped in it can be sustained for at least twenty four hours;
 - (i) is used in conjunction with lifting gear which enables the bell, without excessive lateral, vertical or rotational movement, to be lowered or raised to or maintained at the depth from which the diving operations are to be carried on; and
 - (j) is provided with equipment by which it can be brought to the surface without using the main lifting gear: Provided that where such equipment involves the shedding of weights, such weights shall be capable of being shed by a person inside the bell and the equipment shall be so designed as to prevent accidental shedding.

(4) An employer shall ensure that every compression chamber or bell is inspected, tested and maintained in accordance with the provisions of the Health and Safety Standard used in the design and manufacture of such compression chamber or bell: Provided that where such code or Health and Safety Standard contains no such provisions the inspections, tests and maintenance shall be carried out by a person competent to carry out such inspection, tests and maintenance by virtue of his or her training and experience as provided for in the recognised Rules and Regulations for the Construction and Classification of Submersibles and Diving Systems: Provided further

that where an employer proposes to execute repairs to a compression chamber or bell he or she shall ascertain beforehand from an approved inspection authority the requirements with respect to such repairs and carry out such repairs under the supervision of an approved inspection authority.

Plant and equipment

10. An employer shall ensure that—

- (a) all diving equipment and machinery which is used in connection with any diving operation or underwater work are designed, manufactured and maintained in accordance with Health and Safety Standard, used properly and kept in good working order;
- (b) plants and equipment necessary for divers to safely enter and leave the water are available during diving operations;
- (c) a compression chamber with all necessary ancillary equipment is available for immediate use whenever diving takes place at a depth exceeding—
 - (i) fifty metres;
 - (ii) ten metres, but not exceeding fifty metres where the routine decompression time exceeds twenty minutes; or
 - (iii) ten metres, but not exceeding fifty metres where the routine decompression time is twenty minutes or less and effective arrangements have not been made for a diver requiring therapeutic recompression to be brought to a suitable chamber within two hours from the time when the need for recompression is identified; and
- (d) each compression chamber registered before 4 January 1991, if it is maintained in accordance with regulation 9(4) of these Regulations, may be used until it is no longer useful.

Council for Diving

11. (1) The chief inspector shall establish a Council for Diving consisting of—

- (a) an officer of the Department, who shall be the chairperson;
- (b) one inspector;
- (c) one person representing the Department of Minerals and Energy;
- (d) a designated medical practitioner;

- (e) one diver;
- (f) one employer; and
- (g) one supervisor.

Provided that the chief inspector may authorise the council to co-opt persons who have specialised knowledge of the matters dealt with by the Council.

(2) The chief inspector shall appoint the members of the council for such period as he or she may determine at the time of appointment: Provided that the chief inspector may discharge a member at any time and appoint a new member in his or her place.

(3) The Council shall—

- (a) make recommendations and submit reports to the chief inspector regarding any matter to which these Regulations relate;
- (b) advise the chief inspector regarding any matter referred to the Council by the chief inspector;
- (c) perform such other functions as may be requested by the chief inspector;
- (d) refer appeals against decisions of the Council to the chief inspector; and
- (e) conduct its work in accordance with the instructions and rules of conduct made by the chief inspector.

(4) A person affected by any decision of the Council may appeal against such decision to the chief inspector, and the decision of the chief inspector shall be final and binding.

Rules, syllabi and examinations

12. The chief inspector shall, in consultation with the Council, make or amend rules for the conduct of examinations and syllabi for such examinations as occasion may require.

Registration as learner diver

13. Any person who satisfies the chief inspector that he or she—

- (a) is at least eighteen years old;
- (b) is in possession of a valid medical certificate of fitness in which he or she is certified to be fit to participate in diving; and
- (c) has been admitted to the approved diving school,

shall be registered as a learner diver by the chief inspector and be furnished with a certificate of registration which shall be valid for one year and which may be renewed by the chief inspector at his or her discretion.

Registration as a diver

14. Any person who satisfies the chief inspector that he or she—

- (a) received appropriate training in diving operations with an organisation approved for diver training as contemplated in regulation 3 of these Regulations;
- (b) has passed the relevant examination for divers;
- (c) is in possession of a level I diving first-aid orientated qualification; and
- (d) is in possession of a valid medical certificate of fitness in which he or she is certified to be fit to participate in diving,

shall be registered as a class I saturation, class II surface-supplied mixed gas, class II surface-supplied air, class III surface-supplied nitrox, class III surface-supplied air, class IV scuba nitrox or class IV scuba air diver, as the case may be, and the chief inspector shall furnish him or her with a certificate of registration, subject to such conditions or restrictions as the chief inspector may deem necessary.

Registration as a diving supervisor

15. Any person who satisfies the chief inspector that he or she—

- (a) has acquired at least two years' experience in all aspects of diving operations after having been registered as either a class I saturation diver and life support technician, class II surface-supplied mixed gas or class II surface-supplied air diver and has acquired at least one year of such experience after having been registered as a class III surface-supplied nitrox diver, class III surface-supplied air diver, class IV scuba nitrox diver or class IV scuba air diver;
- (b) is in possession of a level III first-aid qualification; and
- (c) has passed the relevant examination for diving supervisors, shall be registered as a class I saturation, class II surface-supplied mixed gas, class II surface-supplied air, class III surface-supplied nitrox, class III surface-

supplied air, class IV scuba nitrox or class IV scuba air diving supervisor, as the case may be, and the chief inspector shall furnish him or her with a certificate of registration, subject to such conditions or restrictions as the chief inspector may deem necessary.

Applications

16. An application for registration as a learner diver, diver, diving supervisor, or for the re-issue of a certificate that has been lost, damaged or destroyed, shall be made in the form and manner approved by the chief inspector.

Withdrawal of certificate of registration

17. (1) Subject to subregulation (2), the chief inspector may withdraw a certificate of registration issued to a learner diver, diver or diving supervisor if such learner diver, diver or diving supervisor—

- (a) no longer complies with any of the conditions referred to in regulations 13, 14 and 15, respectively; or
- (b) is convicted of an offence as contemplated in regulation 19.

(2) The chief inspector may not withdraw a certificate of registration unless he or she has—

- (a) informed the holder of such certificate of registration of the intended withdrawal thereof and of the grounds upon which it is based; and
- (b) afforded such holder a reasonable opportunity to state his or her case and, if the holder is a person as contemplated in subregulation (1)(a), afforded such holder an opportunity to comply with those conditions within the period specified by the chief inspector.

(3) The chief inspector must, in writing, inform the person concerned of the reasons for his or her decision.

(4) Any person adversely affected by a decision of the chief inspector may, in writing, appeal to Director-General against such decision.

(5) Such appeal must—

- (a) be lodged within sixty days from the date on which the decision was made known; and
- (b) set out the grounds of appeal.

(6) After considering the grounds of appeal and the chief inspector's reasons for his or her decision, the Director-General shall as soon as practicable confirm, set aside or amend the decision.

Fees payable

18. The fees payable in respect of an application contemplated in regulation 16 of these Regulations shall from time to time be determined by the Minister after consultation with the Minister of Finance by notice in the Gazette and shall be payable in the form of uncanceled revenue stamps.

Offences and penalties

19. Any person who contravenes or fails to comply with any of the provisions contained in regulations 3 to 10, shall be guilty of an offence and liable upon conviction to a fine or to imprisonment for a period not exceeding twelve months and, in the case of a continuous offence, to an additional fine of two hundred rands or additional imprisonment of one day for each day which the offence continues: Provided that the period of such additional imprisonment shall not exceed ninety days.

Repeal

20. The Diving Regulations published under Government Notice No. R. 343 of 22 February 1991 is hereby repealed.

Short title

21. These Regulations shall be called the Diving Regulations, 2001.

No. R. 12

11 January 2002

Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
Incorporation of the Health and Safety Standards in the Diving Regulation, 2001

Under section 44 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), I, Membathisi Mphumzi Sheroard Mdladlana, Minister of Labour, hereby incorporate the South African Bureau of Standards' Code of practice for portable Metal Containers for Compressed Gasses, SABS 019-1985, the "American Society of Mechanical Engineers. Safety Standard for Pressure Vessels for Human Occupancy, ANSI/ASME PVHO-1-1997", "Lloyd's Register of Shipping. Rules and Regulations for the Construction and Classification of Submersibles and diving systems, Lloyd's Register of Shipping, London, UK 1989", "Germanischer Lloyd. Rules for Classification and Construction, III - Offshore Technology, Part 1 – Underwater Technology, Germanischer Lloyd, Hamburg, Germany, 2000", "De Norske Veritas. Rules for certification of Diving Systems, De Norske Veritas, Hovik, Norway, 1988". and the American Bureau of Shipping. Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities, American Bureau of Shipping, New York, U.S.A. 1979" into the Diving Regulations 2001.

M M S MDLADLANA
MINISTER OF LABOUR

ANNEXURE A

(on front cover)

DIVER'S LOGBOOK

1. This logbook must at the request of an inspector be produced for inspection.
2. The holder of this logbook must enter herein a complete report on every diving operation undertaken by him or herself, sign the report, and have it countersigned by the diving supervisor.
3. The logbook must be kept in safe custody by the holder thereof.

PERSONAL DETAILS OF DIVER

(on inside of front cover)

Full name:.....

Identity number:.....

Class of diver

Restrictions

.....

.....

.....

.....

.....

.....

Type of diving equipment for which diver is qualified:

Type of equipment

Date

Diving supervisor

(1)

(2)

(3)

(4)

(5)

Name of employer:

Date:

(1)

.....

(2)

.....

(3)

.....

PARTICULARS OF DIVING OPERATIONS**(on each subsequent page)**

Date of diving operation

Name of supervisor

Name of standby diver

Name of buddy diver

Place

Nature of dive

Depth

Diving equipment

Breathing mixture

Time left surface

Bottom time

Time arrived at surface

Diving time

Decompression schedule

Remarks

.....

.....

Diver

Diving supervisor

ANNEXURE B**DIVING OPERATIONS RECORD**

- Name and address of the company/institution
- Location, time and date of diving operations
- Names of the diving supervisor, standby diver, diver and line attendant
- Depth of dive
- Time Left Surface (per diver)
- Bottom time (per diver)
- Time arrived at surface (per diver)
- Approximate water temperature and thermal protection used
- Environmental conditions (approximate sea state, underwater visibility and underwater currents)
- Decompression tables and schedule
- Elapsed time since last pressure exposure if less than twenty four hours or repetitive dive designation
- Breathing mixture used and composition
- Type of work performed
- Type of diving equipment worn by diver(s)
- Any unusual conditions, e.g. contaminated water.

For each diver for whom a decompression sickness is suspected or symptoms are evident, the following additional information shall be recorded and maintained:

- Description of decompression sickness symptoms, including depth and time of onset.
- Description and results of treatment.

ANNEXURE C**REGULATION 3 (8) OF DIVING REGULATIONS, 2001**

1. **Additional matters in respect of which class I saturation diver has to attain a satisfactory standard of competence are the following:**
 - (a) The theory of mixed gas, saturation and bell diving.
 - (b) Gases and gas systems.
 - (c) Diving safely and competently to depths exceeding seventy metres from a diving bell.
 - (d) Use of diver communication systems appropriate to mixed gas, saturation and bell diving.
 - (e) Diving bell operation, lockout and re-entry procedures, transferring to surface compression chamber, recompression on mixed gas, decompression and decompression tables appropriate to mixed gas, saturation and bell diving.
 - (f) Emergency procedures for mixed gas, saturation and bell diving.
 - (g) First aid appropriate to emergencies arising in mixed gas, saturation and bell diving.
 - (h) Relevant legislation and guidance.
 - (i) Appropriate practical training for deep diving.
2. **Matters in respect of which a class II surface-supplied mixed-gas diver has to attain a satisfactory standard of competence are the following:**
 - (a) The theory of mixed gas and bell diving.
 - (b) Gases and gas systems.
 - (c) Diving safely and competently in various conditions not exceeding seventy metres in depth with the aid of a stage and an open bell.
 - (d) Use of diver communication systems appropriate to mixed gas and bell diving.
 - (e) Diving bell operations, recompression on mixed gas, decompression and decompression tables appropriate to mixed gas and bell diving.
 - (f) Emergency procedures for mixed gas and bell diving.
 - (g) First aid appropriate to emergencies arising in mixed gas and bell diving.

- (h) Relevant legislation and guidance.
- (i) Surface compression chamber operations and therapeutic recompression appropriate to mixed gas diving.
- (j) Appropriate practical training for deep diving.

3. **Matters in respect of which a class II surface-supplied air diver has to attain a satisfactory standard of competence are the following:**

- (a) The theory of air diving.
- (b) Use of scuba and surface-supplied diving equipment.
- (c) Diving safely and competently in various conditions not exceeding fifty metres in depth, including the safe use of hand tools, power tools and equipment.
- (d) Use of diver communication systems appropriate to air diving.
- (e) Emergency procedures for air diving.
- (f) Surface compression chamber operations, therapeutic recompression, decompression and decompression tables appropriate to air diving.
- (g) First aid appropriate to emergencies arising in air diving.
- (h) Relevant legislation and guidance.
- (i) Appropriate practical training for deep diving.

4. **Matters in respect of which a class III surface-supplied nitrox diver has to attain a satisfactory standard of competence are those matters specified for a class III surface-supplied air diver, including the following:**

- (a) The theory of nitrox diving to thirty metres.
- (b) Gases and gas systems appropriate to nitrox on surface-supply.
- (c) Decompression tables and recompression.
- (d) Emergency procedures for nitrox on surface-supply.
- (e) First aid appropriate to emergencies arising out of nitrox diving.
- (f) Appropriate practical training for diving with surface-supply nitrox equipment.

5. **Matters in respect of which a class III surface-supplied air diver has to attain a satisfactory standard of competence are the following:**

- (a) The theory of air diving

- (b) Use of surface-supplied air diving equipment
- (c) Use of scuba (complete syllabus of class IV scuba air diver)
- (d) Diving safely and competently in various conditions at depths not exceeding thirty metres.
- (e) Use of diver communications systems appropriate to air diving.
- (f) Emergency procedures for air diving.
- (g) Surface compression chamber operations, therapeutic recompression, decompression and decompression tables appropriate to air diving.
- (h) First aid appropriate to emergencies arising in air diving.
- (i) Relevant legislation and guidance.
- (j) Appropriate practical training for deep diving.

6. **Matters in respect of which a class IV scuba nitrox diver has to attain a satisfactory standard of competence are those matters specified for a class IV scuba air diver, including the following:**

- (a) The theory of nitrox diving to thirty metres.
- (b) Gases and gas systems appropriate to nitrox on scuba.
- (c) Decompression tables and recompression.
- (d) Emergency procedures for nitrox on scuba.
- (e) First aid appropriate to emergencies arising out of nitrox diving.
- (f) Appropriate practical training for diving with scuba nitrox equipment.

7. **Matters in respect of which a class IV scuba air diver has to attain a satisfactory standard of competence are the following:**

- (a) The theory of air diving.
- (b) Use of scuba.
- (c) Diving safely and competently in various conditions at depths not exceeding thirty metres.
- (d) Use of diver communication systems appropriate to air diving.
- (e) Emergency procedures for air diving.
- (f) Therapeutic recompression, decompression and decompression tables appropriate to air diving.

- (g) First aid appropriate to emergencies arising in air diving.**
- (h) Relevant legislation and guidance.**
- (i) Appropriate practical training for scuba diving.**

ANNEXURE D
MINIMUM PERSONNEL REQUIREMENTS

DEPTH RANGE	SCUBA AIR	SCUBA NITROX	HOOHAH: ONLY SCIENTIFIC, ARCH. & SHELLFISH DIVING	SURFACE-SUPPLIED AIR	SURFACE-SUPPLIED MIXED GAS	SATURATION DIVING
0 - 15m	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor (as defined) 1 x Gas technician	See the last 2 pages for the list
15 - 30m	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Diving supervisor 1 x Gas technician	
30 - 50m	2 x Diver (Buddied up)	2 x Diver (Buddied up)	NO DIVING ALLOWED	1 x Diver 1 x Line attendant	1 x Diver 1 x line attendant	

	1 x Line attendant 1 x Standby diver 1 x Diving supervisor	1 x Line attendant 1 x Standby diver 1 x Diving supervisor		1 x Standby diver 1 x Standby attendant 1 x Diving supervisor	1 x Standby diver 1 x Standby attendant 1 x Diving supervisor 1 x Gas technician	
50 - 70m	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Standby attendant 1 x Diving supervisor 1 x Gas technician	
70 - 100m	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 2 x Standby diver 1 x Diving supervisor 1 x Gas technician 1 x Diver medic 2 x LST

MINIMUM SATURATION DIVING MANNING LEVELS FOR TWO DAYS

- 1 x Diving supervisor
- 2 x Life support technicians
- 2 x Divers in saturation
- 1 x Standby diver (Diver medical technician)
- 1 x Mechanical technician
- 1 x Electrical technician

SIX DIVERS

- 2 x Diving supervisors
- 2 x Life support technicians
- 4 x Divers in saturation
- 1 x Standby diver (Diver medical technician)
- 1 x Mechanical technician
- 1 x Electrical technician

FOUR DIVERS

- 2 x Diving supervisors
- 2 x Life support technicians
- 4 x Divers in saturation
- 1 x Standby diver (Diver medical technician)
- 1 x Mechanical technician
- 1 x Electrical technician

The above manning levels are the absolute minimum. Additional personnel will be required for increased saturation team size.

GUIDE

to the

DIVING REGULATIONS, 2001

by the

**CHIEF DIRECTORATE:
OCCUPATIONAL HEALTH AND SAFETY**

DEPARTMENT OF LABOUR

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1. INTRODUCTION

The Diving Regulations, 2001, provide a legal framework for the thorough planning of safe diving in South Africa. This guide was designed to explain in simple language what people who are involved in the diving business or the training of divers should do in order to comply with the law. The Diving Regulations, 2001 remain the sole authority for the provisions of the law. Therefore, this guide must be read in conjunction with the Diving Regulations, 2001.

2. APPLICATION

These regulations are aimed primarily at the health and safety of persons employed in diving operations in the Republic of South Africa and its territorial waters. This regulation is promulgated under the Occupational Health and Safety Act, 1993 (As amended).

The Diving Regulations, 2001 apply to persons involved in commercial diving operations where an employer-employee relationship exists. Such a relationship exists when one person provides another person with work and remunerates that person or expressly or tacitly undertakes to remunerate him/her, but excludes a Temporary Employment Service in terms of the Labour Relations Act, 1995 (Act 66 of 1995).

This relationship also exists when any person who is employed by or work for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.

Finally, these regulations shall not apply to persons as stipulated in regulation 2(2) of the Diving Regulations, 2001.

3. TRAINING OF DIVERS

Herewith the requirements to be met by organisations for diver training as per Regulation 3 of the Diving Regulations, 2001, viz.

3.1. Scope

3.1.1. In terms of Regulation 3(1) of the Diving Regulations 2001, no person shall train another person to dive unless he/she has been approved as a training organisation;

- 3.1.2. In terms of Regulation 3(2) of the Diving Regulations, any person who has at his/her disposal such staff, plant, equipment and other ancillary facilities as to enable him/her to offer the curriculum of instruction and training for learner divers framed by the Chief Inspector for approval as a training organisation. The Chief Inspector may approve such application subject to such condition as he/she may impose, as advised by the Chairperson of the Council for Diving;
- 3.1.3. The application must indicate to what level the applicant intends training learner divers e.g. Class III. This is of utmost importance, as specific equipment is needed for training the different Classes of divers; and
- 3.1.4. A careful study also has to be made of the syllabus for each Class of diver, in order to know what equipment is necessary to train the particular Class of learner diver.

3.2 REQUIREMENTS

3.2.1 Personnel

An organisation, approved for diving training, shall have in its employ the following viz.

- 3.2.1.1. A full time diving instructor, who is registered as a diving supervisor in terms of Regulation 15 of the Diving Regulations, 2001. It must be borne in mind that in order for a diving instructor to train learner diver, he/she must at least be registered as a diving supervisor to the level he/she wants to train. E.g. a Class III diving supervisor may train learner divers to Classes IV and III, but not Class II;
- 3.2.1.2. To be approved as a diving instructor the diving supervisor must have gained at least 2 years experience and have logged 200 hours as a diving supervisor for that particular Class he/she wants to train to. A further requirement would be that diving supervisor must at least have completed a basic course in instructional techniques;
- 3.2.1.3. In the initial stages of training there must be a registered diver (instructor) to accompany the learner diver, as stipulated in regulation 3(3)(b) of the Diving Regulations, 2001. Once the diving instructor is satisfied that the learner diver is sufficiently experienced, he/she may be permitted to undertake dives, unaccompanied to a depth of not more than 10 meters, unless the learner diver is on a life-line or umbilical;

- 3.2.1.4. A person who is qualified to render first aid and who has a thorough knowledge of the treatment to be applied and of the equipment to be used, including applying oxygen, in cases of drowning, decompression sickness and other ailments associated with diving operations. These persons should be on duty at the control point at the surface when dives are undertaken. (See Regulation 7(2)(c)(i) of the Diving Regulations, 2001);
- 3.2.1.5. A line attendant, if a life-line is used. Note that learner divers may be used to act as line attendants if there are enough learner divers on course. If a learner diver is on SCUBA and not attached to a life-line, then through water voice communications must be used. If only two persons are being trained, there will have to be a line attendant, if a life-line is used, other than the persons under training;
- 3.2.1.6. For the training of Class I divers, a person who has qualified as a life support technician when saturation or bell dives are undertaken, will remain on duty at all times. (See Regulation 7(2)(b) of the Diving Regulations, 2001);
- 3.2.1.7. A standby diver, in terms of Regulation 7(2)(b) of the Diving Regulations, 2001, who shall be in immediate readiness to dive. The regulations also stipulate that where two divers are in the water at the same time and are near to each other to communicate with and render assistance to each other in an emergency, the one may be deemed to be a standby diver for the other. One must take into account things like water visibility, confined space, underwater hazards, etc. before allowing this to take place. **The diving instructor must conduct a hazard identification and risk assessment exercise, before applying this practice.**
- 3.2.1.8. Such persons, as are necessary to man any machinery and equipment, which may be required during the diving operation e.g. a person who is qualified in the operation of a compression chamber as required in terms of Regulation 10 (c) of the Diving Regulations, 2001. This is not compulsory for the training of learner divers up to the level of Class III, because no surface decompression is required when training learner divers in Classes IV and III. It is however compulsory for Class II and I. It must be remembered that for Classes IV and III training dives in a compression chamber is still required; and
- 3.2.1.9. Refer to Annexure D of the Diving Regulations, 2001, for additional information.

3.2.2. Facilities

An organisation approved for diving training shall have the following facilities at its disposal, viz.

- 3.2.2.1 a suitable room for lecture equipment with a black/white board, seats, tables, etc.;
- 3.2.2.2. adequate change rooms with showers and toilets;
- 3.2.2.3. a reasonable selection of tools for the use in the maintenance of diving equipment. The services may be contracted out;
- 3.2.2.4. First-aid facilities, it may be that the organisation itself is an approved training organisation for first-aid, approved by the Chief Director: Occupational Health and Safety. If not, the services of an approved organisation can be used to provide the necessary training. Please note that for all Classes of divers, first-aid training must be provided, at least to level I. For diving supervisors, first-aid training must be provided to level 3. The minimum first-aid equipment as stipulated in Regulation 3(4) of the General Safety Regulations, 1996, Appendix A, must be available; and
- 3.2.2.5. a diving tank or swimming pool for confined water instruction purposes.

3.2.3. Literature

An organisation approved for diving training shall have the following literature to aid teaching, instruction, maintenance, etc., viz.

- 3.2.3.1. a copy of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations (As amended) and Mine Health and Safety Act, 1996 (Act No 29 of 1996);
- 3.2.3.2. a copy of the approved syllabus, for the Class of divers to be trained, i.e. Class III;
- 3.2.3.3. a copy of the approved syllabus, for the training of diving supervisors;
- 3.2.3.4. a selection of the manuals, listed in the syllabus, covering all the necessary course material;
- 3.2.3.5. copies of the relevant SABS Codes of Practice i.e. SABS 019- 1985 (as amended) and other relevant guidance notes, standards and Codes of Practice;

- 3.2.3.6. a complete set of decompression and therapeutic recompression tables, together with the application procedures e.g. the Royal Navy Diving Tables, US Navy Standard Air Decompression Tables, etc.; and
- 3.2.3.7. any other documents, charts, etc. necessary for the instruction in and planning of diving operations. This will include Diver's log books and the diving operations record that must be completed and signed by the diving supervisor for each particular dive, in terms of regulation 7(2)(r) of the Diving Regulations, 2001.

3.2.4. Diving Plant And Equipment

An organisation approved for diver training shall have the following diving plant and equipment available for training purposes for the different Classes of divers, viz.

3.2.4.1. Class I

- (i) A closed bell and a saturation system, which must be designed and constructed in accordance with a Code of Practice incorporated into these Regulations, in terms of Section 44 of the Act;
- (ii) These standards are the American Society of Mechanical Engineers' Safety Standard for Pressure Vessels for Human Occupancy, ANSI/ASME PVHO – 1 – 1984, and the Lloyd's Register of Shipping Rules and Regulations for the Construction and Classification of Submersibles and Diving Systems Part 1 to 7. Germanischer Lloyd Rules for Classification and Construction Offshore Technology Chapter 1,2, and 3 (Part 1), De Norske Veritas (DNV)-Rules for certification of Diving Systems and the American Bureau of Shipping, Underwater System and vehicles. Rules into the Diving Regulations, 2001, shall be relevant to the date of contract.

3.2.4.2. Class II

- (i) A compression chamber, which must be designed and constructed as mentioned for Class I divers; and
- (ii) An open bell (Wet bell) and diving stage must be used for the raising and lowering of divers to and from the underwater workplace.

3.2.4.3. Class III

- (i) No surface decompression is required in the training of these divers. They must however do chamber dives and a chamber must therefore be available.

3.2.4.4. **Class IV**

- (i) No surface decompression is required in the training of these divers. They must however do chamber dives and a chamber must therefore be available.

NOTE:

The equipment and facilities necessary for the compression chamber is listed under Regulation 9(2) of the Diving Regulations, 2001.

If a compression chamber is not available at the Diving School which is registered to train learner divers up to Class III, written confirmation must be obtained from a company or user that will make a chamber available for chamber dives and in cases of emergency. This is of utmost importance, because the diving instructor must have access to the facility 24 hours a day.

3.2.5. Diving Associated Equipment

An organisation approved for diver training shall have the following equipment associated with diving and diving equipment available, viz.

- 3.2.5.1. Underwater voice communication equipment when training Classes I, II and III. For Class IV training, a through-water communication system must be used, if no life-line is used. Training must be however provided in both scenarios for Class IV divers;
- 3.2.5.2 an adequate supply of oxygen piped to the compression chamber. This is for therapeutic treatment and for surface O₂ decompression dives up to 18 meters;
- 3.2.5.3. at least four sets of O₂ bibs, two in the fore-chamber and two in the main-chamber of the compression chamber;
- 3.2.5.4. a sufficient supply of the appropriate breathing mixture must be readily available at the required pressure to provide for all the activities of the dive team for the duration of the diving operation. This will entail that storage cylinders be kept at the compression chamber, in case of an emergency e.g. compressor failure. Also, if learner divers are diving with surface supplied diving equipment, they must have bailout cylinders on their backs;
- 3.2.5.5. a high pressure air compressor for recharging storage and diving cylinders. The services of an outside company or person may be used to fill these cylinders; and
- 3.2.5.6. For Classes II and III, at least two different sets of commonly used surface supplied diving equipment, (demand and free flow) as per the definition of surface supplied diving equipment must be used. This entails the use of full face

masks or helmets and it must be of a type that has an oral/nasal facility to prevent CO₂ build-up, unless a free flow helmet is used.

3.2.6. Hand And Power Tools

An organisation approved for diving training shall have the following types of tools available for training purposes and actual use, viz.

3.2.6.1. Hand tools;

3.2.6.2. Pneumatic and /or Hydraulic power tools;

3.2.6.3. Electric and / or gas cutting and welding equipment; and

3.2.6.4. Any other tools that the instructor may deem necessary

NOTE: These requirements must be read with the syllabi for the different Classes of divers.

3.3. Classes Of Divers

3.3.1. Class I Saturation Diver

Means a Class II surface supplied diver who has been trained in all aspects of mixed gas, saturation and bell diving to a depth of at least 100 meters. In order for a person to qualify to become a learner diver for this Class, he/she must have spent at least 50 hours bottom time in diving operations, 15 hours of which should have been to depths greater than 30 meters. This after he/she was registered as Class II surface supplied mix gas diver. The learner diver then has to undergo underwater diving training of at least 50 hours to a depth of at least 100 meters in order to qualify to be registered as a Class I saturation diver.

3.3.2. Class II Surface-Supplied Mixed Gas Diver

Means a Class II surface-supplied air diver trained in all aspects of mixed gas diving using surface-supplied diving equipment with open bell and diving stage, limited by decompression tables utilised (non- saturation dive), to depths not exceeding 70 meters. A learner diver for this Class shall undergo underwater diving training of not less than 10 hours bottom time of additional training, after qualifying as a Class II surface-supplied air diver, using mixed gas. This will be to depths greater than 30 meters but not exceeding 70 metres, with the use of open bell and diving stage. This is in order to qualify to register as a Class II surface-supplied mixed gas diver.

3.3.3. Class II Surface-Supplied Air Diver

Means a Class III surface-supplied air diver trained in all aspects of air diving using surface-supplied diving equipment, power-tools, wet bell and/or diving stage, and surface decompression procedures to a depth of 50 meters. A learner diver for this Class shall undergo underwater diving training of not less than 35 hours bottom time, to depths not exceeding 50 meters, so as to qualify for registration as a Class II surface-supplied air diver.

3.3.4. Class III Surface-Supplied Nitrox Diver

Means a Class III surface-supplied air diver trained in all aspects of nitrox diving using surface-supplied diving equipment to a depth not exceeding 30 meters, without the use of a compression chamber. A learner diver for this Class shall undergo underwater diving training of not less than 7 hours bottom time of additional training, using nitrox gas, after qualifying as a Class III surface-supplied air diver. This is in order to qualify to register as a Class III surface-supplied nitrox diver.

3.3.5. Class III Surface-Supplied Air Diver

Means a Class IV SCUBA air diver trained in all aspects of air diving using surface-supplied diving equipment to a depth not exceeding 30 meters, without the use of a surface compression chamber. A learner diver for this Class shall undergo underwater diving training of not less than 20 hours bottom time, to depths not exceeding 30 meters, so as to qualify for registration as a Class III surface-supplied air diver.

3.3.6. Class IV Scuba Nitrox Diver

Means a Class IV SCUBA air diver trained in all aspects of nitrox diving using SCUBA to a depth not exceeding 30 meters, without the use of a surface compression chamber. A learner diver for this Class shall undergo underwater diving training of 5 hours bottom time, using nitrox gas, after completing a Class IV SCUBA air divers course, to depths not exceeding 30 meters, so as to register as a Class IV SCUBA nitrox diver.

3.3.7. Class IV Scuba Air Diver

Means a diver trained in all aspects of air diving using SCUBA to a depth not exceeding 30 meters, without the use of a surface compression chamber. A learner diver for this Class shall undergo underwater diving training of not less than 15 hours bottom time, to depths not exceeding 30 meters, so as to qualify for registration as a Class IV SCUBA air diver.

3.3.8. Standards Of Competence

1. **ADDITIONAL MATTERS IN RESPECT OF WHICH CLASS I SATURATION DIVER HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THE FOLLOWING:**
 - (a) The theory of mixed gas, saturation and bell diving.
 - (b) Gases and gas systems.
 - (c) Diving safely and competently to depths exceeding 70m from a diving bell.
 - (d) Use of diver communication systems appropriate to mixed gas, saturation and bell diving.
 - (e) Diving bell operation, lockout and re-entry procedures, transferring to surface compression chamber, recompression on mixed gas, decompression and decompression tables appropriate to mixed gas, saturation and bell diving.
 - (f) Emergency procedures for mixed gas, saturation and bell diving.
 - (g) First aid, appropriate to emergencies arising in mixed gas, saturation and bell diving.
 - (h) Relevant legislation and guidance.
 - (i) Appropriate practical training for deep diving.
2. **MATTERS IN RESPECT OF WHICH A CLASS II SURFACE-SUPPLIED MIXED GAS DIVER HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THE FOLLOWING:**
 - (a) The theory of mixed gas and bell diving.

- (b) Gases and gas systems.
- (c) Diving safely and competently in various conditions not exceeding 70m in depth with the aid of a stage and an open bell.
- (d) Use of diver communication systems appropriate to mixed gas and bell diving.
- (e) Diving bell operations, recompression on mixed gas, decompression and decompression tables appropriate to mixed gas and bell diving.
- (f) Emergency procedures for mixed gas and bell diving.
- (g) First aid appropriate to emergencies arising in mixed gas and bell diving.
- (h) Surface compression chamber operations and therapeutic recompression appropriate to mixed gas diving.
- (i) Relevant legislation and guidance.
- (j) Appropriate practical training for deep diving.

3. **MATTERS IN RESPECT OF WHICH A CLASS II SURFACE-SUPPLIED AIR DIVER HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THE FOLLOWING:**

- (a) The theory of air diving.
- (b) Use of scuba and surface-supplied diving equipment.
- (j) Diving safely and competently in various conditions not exceeding 50m in depth, including the safe use of hand tools, power tools and equipment.
- (k) Use of diver communication systems appropriate to air diving.
- (l) Emergency procedures for air diving.
- (m) Surface compression chamber operations, therapeutic recompression, decompression and decompression tables appropriate to air diving.
- (n) First aid appropriate to emergencies arising in air diving.
- (o) Relevant legislation and guidance.
- (p) Appropriate practical training for deep diving.

4. **MATTERS IN RESPECT OF WHICH A CLASS III SURFACE-SUPPLIED NITROX DIVER HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THOSE MATTERS SPECIFIED FOR A CLASS III SURFACE SUPPLIED AIR DIVER, INCLUDING THE FOLLOWING:**
 - (a) The theory of nitrox diving to 30m.
 - (b) Gases and gas systems appropriate to nitrox on surface-supply.
 - (c) Decompression tables and recompression.
 - (d) Emergency procedures for nitrox on surface-supply.
 - (a) First aid appropriate to emergencies arising out of nitrox diving.
 - (f) Appropriate practical training for diving with surface-supply nitrox equipment.
5. **MATTERS IN RESPECT OF WHICH A CLASS III SURFACE SUPPLIED AIR DIVER HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THE FOLLOWING:**
 - (a) The theory of air diving
 - (b) Use of surface supplied diving equipment
 - (c) Use of scuba – complete class IV scuba air diver's syllabus
 - (d) Diving safely and competently in various conditions at depths not exceeding 30 m
 - (e) Use of diver communications systems appropriate to air diving.
 - (f) Emergency procedures for air diving.
 - (g) Surface compression chamber operations, therapeutic recompression, decompression and decompression tables appropriate to air diving.
 - (h) First- aid appropriate to emergencies arising in air diving.
 - (i) Relevant legislation and guidance.
 - (j) Appropriate practical training for deep diving.

6. MATTERS IN RESPECT OF WHICH A **CLASS IV SCUBA NITROX DIVER** HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THOSE MATTERS SPECIFIED FOR A CLASS IV SCUBA AIR DIVER, INCLUDING THE FOLLOWING:

- (a) The theory of nitrox diving to 30m.
- (b) Gases and gas systems appropriate to nitrox on scuba.
- (c) Decompression tables and recompression.
- (d) Emergency procedures for nitrox on scuba.
- (e) First-aid appropriate to emergencies arising out of nitrox diving.
- (f) Appropriate practical training for diving with scuba nitrox equipment.

7. MATTERS IN RESPECT OF WHICH A **CLASS IV SCUBA AIR DIVER** HAS TO ATTAIN A SATISFACTORY STANDARD OF COMPETENCE ARE THE FOLLOWING:

- (a) The theory of air diving.
- (b) Use of scuba.
- (c) Diving safely and competently in various conditions at depths not exceeding 30 m.
- (d) Use of diver communication systems appropriate to air diving.
- (e) Emergency procedures for air diving.
- (f) Therapeutic recompression, decompression and decompression tables appropriate to air diving.
- (g) First aid appropriate to emergencies arising in air diving.
- (h) Relevant legislation and guidance.
- (i) Appropriate practical training for scuba diving.

3.3.9. Registration Of Learner Divers

A person, who wants to do a commercial diving course at an approved diving school, must be registered with the Department of Labour as a learner diver for that class of diving.

In order to qualify for registration, the prospective learner diver must comply with the following requirements, viz.

- ◆ At least be 18 years old;
- ◆ Have a valid medical certificate of fitness;
- ◆ The approved diving school must submit a letter as proof that he/she has been accepted.

An application form must be completed for each prospective learner diver at the diving school, which must also be submitted with the letter from the diving school, to the Department of Labour. An example of the application form (Form D1) is attached to this document.

The Diving School will submit the applications to:

THE CHIEF DIRECTOR: OCCUPATIONAL HEALTH AND SAFETY
PRIVATE BAG X117
PRETORIA
0001

The following must accompany the application form, viz.

- ◆ A registration fee of R50, 00 must be paid in the form of an uncanceled revenue stamp. The stamp must be placed at the top right-hand corner on the application form;
- ◆ X 2 certified photographs (28 x 25 mm);
- ◆ Certified copy of birth certificate or Identification Book (ID);
- ◆ Letter of confirmation from the diving school; and
- ◆ Certified copy of the medical certificate issued by the Designated Medical Practitioner.

Once the Department of Labour has processed the applications, the learner divers' certificates will be send back to the diving school, which will forward it to the learner divers concerned. These certificates will only be valid for a period of one year. Please note that all learner divers **must** be in possession of their learner diver's certificates before training commences.

3.3.10. Registration Of Divers

Learner divers wishing to register as divers for any Class of diving, must:

- ◆ have received appropriate training from an approved diving school;
- ◆ have passed the relevant examination for divers; and
- ◆ have a valid medical certificate.

The Diving School must submit an application for registration, stating that the learner diver has successfully completed his/her diving course at that approved facility. The results of the examinations, i.e. legal knowledge, diving theory and diving practical, must be displayed on the letter for each learner diver applying for registration as a diver.

An application form must be completed for each learner diver and also be submitted with the letter from the diving school. An example of the application form (Form D1) is attached to this document.

The following must accompany the application form, viz.

- ◆ A registration fee of R50, 00 must be paid in the form of an uncanceled revenue stamp. The stamp must be placed at the top right-hand corner on the application form;
- ◆ X 2 certified photographs (28 x 25 mm);
- ◆ Certified copy of birth certificate or Identification Book (ID); and
- ◆ Letter of confirmation from the diving school.

The Diving School will submit the applications to:

THE CHIEF DIRECTOR: OCCUPATIONAL HEALTH AND SAFETY
PRIVATE BAG X117
PRETORIA
0001

Once the Department of Labour has processed the applications, the certificates will be send back to the diving school, which will forward it to the diver concerned.

3.3.11. Registration Of Diving Supervisors

For each Class of diver there is a diving supervisor qualification.

In order to qualify to register as a diving supervisor, a registered diver must have gained some experience as a diver and attended a diving supervisor's course at an approved diving school.

The Diving School must submit an application for registration, stating that the diver has successfully completed his/her diving supervisor's course at that approved facility. The results of the examinations, i.e. legal knowledge, diving theory and diving practical, must be displayed on the letter for each diver applying for registration as a diving supervisor.

An application form must be completed for each prospective diving supervisor and must also be submitted with the letter from the diving school. An example of the application form (Form D1) is attached to this document.

The following must accompany the application form, viz.

- ◆ A registration fee of R50, 00 must be paid in the form of an uncanceled revenue stamp. The stamp must be placed at the top right-hand corner on the application form;
- ◆ X 2 certified photographs (28 x 25 mm);
- ◆ Certified copy of birth certificate or Identification Book (ID); and
- ◆ Letter of confirmation from the diving school.
- ◆ A copy of a valid medical certificate of fitness.
- ◆ A copy of his existing diving certification

The Diving School will submit the applications to:

THE CHIEF DIRECTOR: OCCUPATIONAL HEALTH AND SAFETY
PRIVATE BAG X117
PRETORIA
0001

Once the Department of Labour has processed the applications, the certificates will be sent back to the diving school, which will forward it to the diving supervisor concerned.

3.3.12. Lost, Destroyed, Damaged And Stolen Certificates

If a certificate is lost, destroyed, damaged or stolen, the holder thereof shall apply to the Department of Labour to be re-issued with a new certificate. The holder must make

contact with the nearest office of the Department of Labour to inform them of the situation.

The holder must re-submit the following, viz.

- ◆ A registration fee of R50, 00 must be paid in the form of an uncanceled revenue stamp. The stamp must be placed at the top right-hand corner on the application form;
- ◆ X 2 certified photographs (28 x 25 mm);
- ◆ Certified copy of birth certificate or Identification Book (ID);
- ◆ An affidavit signed by the S.A. Police Services, stating that the certificate was lost, destroyed, damaged or stolen; and
- ◆ An application form (form D1) can be obtained at the offices of the Department of Labour.

4. MEDICAL EXAMINATIONS AND CERTIFICATES OF FITNESS

It is a legal requirement that all prospective learner divers must be declared medically fit by a Designated Medical Practitioner to do a commercial diving course at an approved diving school. Regulation 4 of the Diving Regulations, 2001 provide the framework for these examinations. It is also a requirement that a diver must be medically in-date with his/her medical examination. A Designated Medical Practitioner must conduct this medical examination annually. In certain cases it would be necessary to refer a prospective learner diver or a diver to a specialist on request of a Designated Medical Practitioner.

“A Designated Medical Practitioner” means a registered medical practitioner designated in terms of the Diving Regulations, 2001 to establish whether divers are fit to dive. The medical practitioner also had to do a course in underwater medicine in order to qualify as a Designated Medical Practitioner and must be registered with the Health Professional Council of South Africa.

A medical certificate of fitness shall indicate the following:

- ◆ The name and identity number of the person to whom it relates;
- ◆ the date of the medical examination;
- ◆ the date of any X-ray photograph taken for the purpose of the examination;
- ◆ whether the person is considered fit to dive;
- ◆ any limitation on the diving or compression for which the person is considered fit;
- ◆ the period, not exceeding 12 months, for which the person is considered fit;

- ◆ the name, address, telephone number, Health Professional Council of South Africa registration number and the Department of Labour number of the designated medical practitioner issuing the certificate as well as the year in which he/she last attended a course in underwater medicine;
- ◆ the signature of the medical practitioner issuing the certificate.

The Designated Medical Practitioner must issue the prospective learner diver or a diver with a certificate and forward the examination results to the Chief Director: Occupational Health and Safety.

5. SUPERVISION OF DIVING OPERATIONS

A diving supervisor must personally take charge of a diving operation. Where an employer is a diving supervisor and he/she takes charge of the diving operation, he/she will then be responsible for the health and safety of the divers. If the employer is not a diving supervisor and operates a commercial diving business, he/she then must appoint in writing a registered diving supervisor to take charge of that diving operation. This must take place on the letterhead of the employer and must be available of inspection by an inspector on request.

Regulation 5 (2) of the Diving Regulations, 2001, mentions that an inspector may approve the designation of a diver to act as diving supervisor on request. This approval will only be granted in cases of emergency i.e. if a diving supervisor becomes ill whilst in charge of a diving operation and another diving supervisor is not available to take over the responsibility. It is not meant for divers to obtain diving supervisor status without doing a diving supervisor's course.

The regulations also states that a diving supervisor must do the following, viz.

- ◆ Regulation 5(3)(a): At all times be available to deal with emergencies at the site where diving operations are carried out

It is crucial that a diving supervisor is available at all times to deal with an emergency and that he/she must be at the site where the diving operation is taking place.

It is part of the responsibilities of the diving supervisor to do hazard identification and risk assessments and to also determine where the surface control point must be. It is ideal that the diving supervisor takes his/her position at the surface control point. If diving is done on surface supply diving equipment, then the diving supervisor should stand behind the surface control panel at the control point. The diving supervisor must be in a position to **manage** if something should go wrong. He/ she is responsible no one else.

- ◆ Regulation 5(3)(b): Not dive while he/she is supervising other divers

If one looks at the definition of a diver it means “*any person registered as a diver in accordance with the Diving Regulations, 2001 and includes a diving supervisor*”

Because the diving supervisor is also defined as a diver he cannot dive and supervise, he/she cannot wear two hats. He/she only has one responsibility and that is to supervise.

- ◆ Regulation 5(3)(c): if another diving supervisor is not available when he/she has to dive for purposes of inspection and planning, ensure that an experienced diver acts as diving supervisor for the duration of the dive.

The diving supervisor, being responsible for the health and safety of the divers, must perform various tasks. He/she might arrive at a dive site and it is necessary to do an underwater survey to determine the extent of the work that has to be performed. This might also include hazard identification and the conducting of a risk assessment, so that systems of work can be developed. It would then be the responsibility of the diving supervisor to appoint the most experienced diver to supervise that particular dive.

- ◆ Regulation 5(3)(d): not act as a standby diver unless another diving supervisor is available to take charge of the diving operation.

This is extremely important. No diving supervisor may act as standby diver. The duty of the diving supervisor is to manage, to take control in the normal sense and in cases of emergency. If the diving supervisor is in the water to carry out a rescue mission, who will take charge of the diving operation? What if he/she during this act also lands up in trouble?

GENERAL ISSUES:

Diving supervisors need to understand that once they receive their letters of appointment they are responsible and liable for what happens at that dive site. This is a legal appointment and the diving supervisor cannot discharge these duties to someone else. They must have a thorough knowledge of the Occupational Health and Safety Act, 1993 and Regulations in order to fully understand their responsibilities.

6. OPERATIONS MANUAL

Section 8 (2) of the Occupational Health and Safety Act, 1993, under the heading “General duties of employers to their employees”, it states that: *Without derogating from the employer’s responsibility to provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his/her employees, the employer must also consider the following, viz.*

That the employer must also provide of the provisions and maintenance of systems of work, plant and machinery that, as far as is reasonable, are safe and without risks to health.

It is clear from the above that it is the responsibility of the employer to draw up safe work procedures, but it does not prescribe how it should be done. Regulation 6 of the Diving Regulations, 2001, however prescribe to some extent, indicating the seriousness of proper working procedures in commercial diving. What it highlights, is that commercial diving, as a profession, is considered a high-risk occupation.

The operations manual is an important document and this regulation clearly spells out what must be catered for when drawing up this manual. Herewith some guidelines to that effect, viz.

- ◆ Regulation 6(1): An employer shall ensure that an operations manual is made available to each diving team at the dive location before commencement of the diving operation:

The reason for making this manual available to the dive team before the commencement of the diving operation is that the diving supervisor, along with his/her team of divers, can study the work procedure. This is important, as they need to find out what is expected of them and also to acquaint themselves with the contents thereof.

It must be realised that if the employer, diving supervisor and divers are in agreement that this is the way the diving operation should be conducted, it becomes a legal document. Every member of the dive team's actions will be measured according this document.

The importance of a well-formulated operations manual cannot be overemphasised. It will eliminate the exposure of divers to risks and in cases of emergency, ensure that certain prescribed steps will be taken. These steps will be known to all on the dive team, thus eliminating irrational decision making, that can lead to an unfavourable situation.

- ◆ Regulation 6(2): An operations manual shall contain provisions for safety and health of employees including:

- ◆ the assignments and responsibilities of each diving team member for each diving mode used.

The assignments and responsibilities are of utmost importance in the health and safety management programme of a company. If the employer does not assign duties, he/she cannot keep the employees responsible if something goes wrong. The assignment of responsibilities must consist of specific instructions to the

employees, so that they will know exactly what the employer requires of them. In this instance, the regulation requires that it must be done in writing.

♦ Safety procedures and checklists for each diving mode used;

The safety procedures must consist of all the necessary techniques and related procedures in the use of specific diving equipment. In order for the employer to ensure that the necessary safety procedures are carried out, safety checklists must be drawn up. The diving supervisor must complete these safety checklists before diving work commences for that day and the signed checklist must be kept with the diving operations record for that particular diving operation.

In this manner, the employer can observe the actions of the diving supervisor and also have the assurance that the divers are diving with equipment that is in a good state of repair.

♦ Procedures and checklists for the use, checking and maintenance of equipment for each diving mode used;

These procedures and checklists must be drawn up for the specific equipment that the dive team will be using during their diving operation. These checklists must be completed by the diving supervisor and must be added to the diving operations record for that particular diving operation.

Taking into consideration when drawing up such procedures and checklists, that all reasonable steps must to be taken by the employer to ensure the divers will use the equipment in such a way, that it will not endanger their health and safety. By having these procedures and checklists, the employer will be assured that diving will be done in a proper manner and the system will be easily audited to ensure compliance.

Proper maintenance schedules must be put in place for the equipment, ensuring that it will be in a good state of repair at all times. The manual must spell out how the employer will go about implementing a maintenance schedule.

♦ Emergency procedures in case of:-

(i) Fire:

The employer must ensure that proper procedures are in place in the event of a fire. The diving supervisor must have no doubt of what his/her actions should be. The employer must also provide the necessary equipment to deal with such an emergency.

(ii) Equipment failure:

The employer must ensure that there is an emergency procedure for all diving equipment, in the event of failure. I.e. if the compressor, supplying air to the divers fail, there should be a back-up supply of air readily available. The operations manual must clearly stipulate these procedures so that all members of the dive team know it.

(iii) Adverse changes in environmental conditions:

The employer must provide guidelines to the diving team, as to what he/she considers to be dangerous and when diving operations must cease. The diving supervisor must be alert and constantly assess the environmental conditions.

♦ Procedures for:

(i) Emergency signalling:

The employer must first of all ensure that there is proper underwater communications system in place. This will apply to diving taking place on surface supplied diving equipment and on SCUBA. If diving on SCUBA, through –water communications (wireless) must be used, unless the diver is on a life-line. The employer must also make the emergency signalling procedures known to the diving team and they must familiarise themselves with it. It must be clearly stipulated in the operations manual so that there will be no doubt in the minds of the diving team in this regard.

(ii) Emergency assistance under water and on the surface:

The employer must stipulate the necessary procedures in the operations manual with regard to rendering of assistance to divers in need. This will entail that the employer must draw up a procedure that will cater, as far as is reasonable practicable, for the actions that must be taken by the diving supervisor to assist divers underwater as well as on the surface of the water. It might be necessary for the diving supervisor to do hazard identification and risk assessment, in order to determine if he/ she has the necessary equipment, personnel, etc. to render assistance if needed.

(iii) Decompression, including therapeutic recompression and decompression, and the availability of compression chambers for such purposes:

A compression chamber is a piece of equipment that is of vital importance for a diver in distress. If a diver suffers from decompression sickness then the only means of remedy is to recompress that diver in a compression chamber and to start with a treatment programme. If a diver has suffered an embolism a compression chamber might be his/her only means of relief and such injury can take place at any depth. Therefore the need for such a facility to be readily available in these circumstances is extremely important. For some diving

operations such a facility will be at the dive site, but for most of the diving taking place, this is not the case. Therefore special arrangements must be made. As an employer it is advisable to obtain a letter from an owner of such a facility, stipulating that he/she will make his/her facility available if the need arises. Sometimes diving will take place at irregular hours, so the employer must ensure that the compression chamber is and will remain available.

It is also suggested that addresses, telephone numbers and contact persons of the facilities are made known in the operations manual, so that in the event of an emergency, the necessary people can be contacted. This is to ensure that they will be ready for the diver when he/she arrives at the compression chamber facility for treatment.

(iv) First-aid:

It is a requirement that the diving supervisor must at least have a level III first-aid qualification. The necessary first-aid equipment must also be available, including oxygen. Note that the diving supervisor must be trained on how to apply oxygen in case of an emergency.

(v) Obtaining medical assistance with specific reference to the need for consultation with a designated medical practitioner if decompression sickness should occur:

The employer must make available the name/s, addresses and telephone number/s of designated medical practitioners in the immediate vicinity of the diving location, so that the diving supervisor will know whom to contact in case of emergency.

(vi) Calling for assistance from emergency services including advance liaison with those services where appropriate:

In order to prepare for any possible emergency, the employer should obtain the details of all the emergency services in the area of the dive location.

Some examples are:

- ◆ Metro rescue
- ◆ Fire Department
- ◆ S.A. Police Service's Waterwing
- ◆ N.S.R.I.
- ◆ Ambulance Services
- ◆ People with specialised equipment
- ◆ All the necessary radio signals must be available in the operations manual, telephone numbers and contact persons.

- ◆ If a Cellular phone is available, please supply the PIN number, in case the phone goes dead i.e. after being dropped, etc.

(vii) Emergency evacuation of the work site:

A written procedure must be in place for this.

(viii) The provisions of emergency supplies:

This will depend on the dive location, the remoteness, will depend on the level of attention the employer will have to give in this regard.

7. CONTROL OF DIVING OPERATIONS

A diving operation is defined in the Diving Regulations, 2001 as:- “ *Meaning all activities of a diving team in preparation for, during and after a dive*”.

This regulation emphasises the need for proper control even before the actual diving takes place. It is obvious that proper control should be obtained during a dive, but the regulation still highlights what an employer must do to ensure that proper control is exercised.

Prior to commencing diving operations an employer shall ensure that:-

- ◆ Hazard identification and risk assessment has been done, (refer to the definitions of danger, hazard, risk and safe in the Occupational Health and Safety Act, 1993, this must be read with Section 8 of the said Act).
- ◆ Proper assistance to divers is available and **must** be the primary concern of the employer. All the necessary personnel must be present to render assistance in case of an emergency and he/she must have the equipment to deal with those situations.
- ◆ A chamber facility is available.
- ◆ A diver **must** have all the necessary diving equipment to safeguard his/her health and safety.
- ◆ All equipment **must** be checked and tested before used.
- ◆ Bottom time, decompression schedules and techniques **must** be made known and understood by everyone.
- ◆ The diving team **must** be informed and trained regarding emergency procedures.
- ◆ Medical oxygen **must** be available at the dive site, irrespective of depth.

During the performance of diving operations an employer shall ensure that:-

- ◆ Good discipline **must** be maintained at all times.
- ◆ The personnel requirements as per Annexure D of the Diving Regulations, 2001 **must** be applied:

ANNEXURE D MINIMUM PERSONNEL REQUIREMENTS

DEPTH RANGE	SCUBA AIR	SCUBA NITROX	HOOKAH/SCIENTIFIC, ARCH. & SHELLFISH ONLY	SURFACE-SUPPLIED AIR/ NITROX	SURFACE-SUPPLIED MIXED GAS	SATURATION DIVING
0 - 15m	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor (as defined)	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor (as defined) 1 x Gas technician	See last 2 pages for the list.
15 - 30m	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Dive supervisor 1 x Gas technician	
30 - 50m	2 x Diver (Buddied up) 1 x Line attendant 1 x Standby diver 1 x Dive supervisor	2 x Diver (Buddied up) 1 x Line attendant 1 x Standby diver 1 x Dive supervisor	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Standby attendant 1 x Dive supervisor	1 x Diver 1 Line attendant 1 x Standby diver 1 x Standby attendant 1 x Dive supervisor 1 x Gas technician	
50 - 70m	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 1 x Standby diver 1 x Standby attendant 1 x Dive supervisor 1 x Gas technician	
70 - 100m	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	NO DIVING ALLOWED	1 x Diver 1 x Line attendant 2 x Standby diver 1 x Dive supervisor 1 x Gas technician 1 x Diver medic 2 x LST

MINIMUM SATURATION DIVING MANNING LEVELS FOR TWO DAYS

1 x Diving Supervisor
 2 x Life Support Technicians
 2 x Divers in saturation
 1 x Standby Diver (Diver medical technician)
 1 x Electrical Technician
 1 x Mechanical Technician

FOUR DIVERS

2 x Diving Supervisor
 2 x Life Support Technicians
 4 x Divers in saturation
 1 x Standby Diver (Diver medical technician)
 1 x Electrical Technician
 1 x Mechanical Technician

SIX DIVERS

2 x Diving Supervisor
2 x Life Support Technicians
4 x Divers in saturation
1 x Standby Diver (Diver medical technician)
1 x Mechanical Technician
1 x Electrical Technician

The above manning levels are the absolute minimum. Additional personnel will be required for increased saturation team size.

- ◆ The issue of standby divers is addressed in regulation 7(2) (b) of the Diving Regulations, 2001. The standby diver **must** be in a state of readiness to dive, provided that where two divers are in the water at the same time and near enough to each other and render assistance to each other in an emergency, the one may be deemed to be a standby diver for the other. Important to note is that the diving supervisor **must** do proper hazard identification and a risk assessment to determine if this is possible. If for example, there is no underwater visibility, it means that the divers cannot communicate, so the standby diver must be on the surface of the water at the control point.
- ◆ A person with a valid first-aid certificate **must** be present at the dive site at all times. A diving supervisor must at least be in possession of a valid level 3 first-aid certificate.
- ◆ The employer/diving supervisor **must** ensure that only "in-date divers" participate in diving operations. "In-date divers" are divers that are holders of valid medical certificates of fitness and who have not been laid off from diving for periods of six months or more. What is also important is the duration of underwater dive times. The dive times should be more than half an hour in duration. In other words, if a person only dived twice in a period of six months and both dives are less than half an hour in duration, the diver is considered to be out of date.
- ◆ Divers **must** at all times assess themselves as far as their physical and mental condition is concerned. If they feel that they are unfit to dive because of the afore-mentioned, they **must** inform the diving supervisor, and not participate in the diving operation. The diving supervisor **must** also assess divers for the same indispositions and not allow divers to dive if he/she is of the opinion that it will be unsafe.
- ◆ When diving on SCUBA lifelines, buddy-lines and surface markers **must** be used. If the diver and the diving supervisor consider the use thereof hazardous then they can do away with it. This means that a proper hazard identification and risk assessment **must** be done. If the diver cannot dive with the afore-mentioned, he/she **must** use a through-water (wireless) communication system, except in the case of a standby diver a lifeline shall be used.
- ◆ All voice communications **must** be recorded. This will be for all classes of diving, including SCUBA.
- ◆ When diving to certain depths the following **must** be remembered:

- ◆ 50 to 70 meters a diving stage must be used, unless a bell is provided;
- ◆ 70 to 100 meters a bell must be used, except when diving in a confined space, which makes the use thereof impractical; and
- ◆ > 100 meters a closed bell must be used.

(Note: where the regulation refers to a bell, it means an open or wet bell. Other than that the regulation will clearly stipulate "closed bell", which is used in class I diving).

- ◆ A diver may not dive to a greater depth than that for which his/her equipment is suited. Manufacturers and safety standards, incorporated into the Diving Regulations, 2001, place limits on the depth at which diving equipment may be used. The employer **must** keep up to date with these limits and comply with them.
- ◆ A sufficient supply of the appropriate breathing mixture **must** be available at the required pressure to provide for all the activities of a dive team for the duration of the diving operation, excluding a diver's bail-out cylinder. The employer **must** take all reasonable steps to ensure that the air supplied to the divers is pure and that it meets the requirements of SABS 019. This will require regular testing of air for impurities. Natural air may not be used to depths exceeding 50 meters, except for treatment purposes in a compression chamber.
- ◆ The keeping of a diving operations record, by the employer/supervisor **must** be done. The Diving Regulations, 2001, stipulate that the employer/supervisor must keep a record as per annexure B of the Regulation, which is as follow, viz.

DIVING OPERATIONS RECORD

- Name and address of the company/institution.
- Location, time and date of diving operations.
- Names of the diving supervisor, standby diver, diver and line attendant.
- Depth of dive.
- Time Left Surface per diver.
- Bottom time. per diver.
- Time arrive surface per diver.
- Approximate water temperature and thermal protection used.
- Environmental conditions (approximate sea state, underwater visibility and underwater currents).
- Decompression tables and schedule.
- Elapsed time since last pressure exposure if less than 24 hours or repetitive dive designation.
- Breathing mixture used and composition.
- Type of work performed.
- Type of diving equipment worn and used by diver/s
- Any unusual conditions, e.g. such as contaminated water.

Where a decompression sickness is suspected or symptoms are evident, the following additional information shall be recorded and maintained:

- Description of decompression sickness symptoms, including depth and time of onset.
- Description and results of treatment.
- ◆ All this information **must** be recorded within 24 hours of completion of a diving operation. This document must be available for an inspector on request and be kept by the employer for two years.
- ◆ **Warning signals:**
 - ◆ during the day flag A as defined in the international Code of Signals; and
 - ◆ by night, the lights as defined in the International Regulations for Preventing Collision at Sea, 1972 (as amended).

8. DECOMPRESSION

- ◆ Regulation 8 of the Diving Regulations, 2001 highlights the safety aspects in the use of compression chambers. The risk of fire is an ever-present concern and therefore certain precautionary measures **must** be taken.
- ◆ Suitable decompression tables **must** be used for procedures simulating an actual dive and for therapeutic recompression.
- ◆ Incidents involving decompression sickness and illnesses **must** be done in accordance with regulation 8 of the General Administrative Regulations, 1996.

9. COMPRESSION CHAMBERS AND BELLS

- ◆ The requirements for the above are listed in regulation 9 of the Diving Regulations, 2001. The Minister has incorporated various Health and Safety Standards into the Diving Regulations, under Section 44 of the Occupational Health and Safety Act, 1993. A list of all these Standards is available in the Regulations.

10. PLANT AND EQUIPMENT

- ◆ The employer **must** ensure that all diving equipment and machinery is maintained and properly used. The Act defines what is properly used, as follows: -*"used with reasonable care, and with due regard to any information or advice supplied by the designer, manufacturer, importer, seller or supplier."*

- ♦ The equipment necessary for safely entering and leaving the water **must** be available during diving. A hazard identification and risk assessment **must** be conducted in order to determine what equipment is needed.
- ♦ A compression chamber with all its additional equipment **must** be available for immediate use whenever diving takes place-
 - *At a depth exceeding 50 meters;*
 - *At a depth exceeding 10 m but not deeper than 50 m where the routine decompression time exceeds 20 minutes; and*
 - *At a depth exceeding 10 m but not deeper than 50 m where the routine decompression time is 20 minutes or less and no arrangements have been made to reach a chamber within 2 hours.*

NB : This two hours must not include air travel time.

11. ADDRESS LIST OF PROVINCIAL OFFICES

OFFICE	PROVINCE	DD: Business unit Heads	ADDRESS	TEL NO.	Fax no.	Prov.DIR.
Bloemfontein	Free State	Mr P Monnaruri (Pule) 082 730 0259	P O Box 522,9300	051 505 6203	051 447 9353	Mr R Ntuli (Richmond)
Durban	KwaZulu Natal	Ms N Moerane (Nokhana)	P O Box 940,4000	031 336 1500 031 336 1536	031 309 1666	Ms T Nene (Ms Thembi Nene)
George	Western Cape	Mr FL Nightingale (Leon)	P Bag X6454, 6530	044 801 1261/38	044 874 1746	(Falls under Cape Town)
Johannesburg	Gauteng South	Mr. T Tzana(Tibor)	P O Box 4560,2000	011 497 3243/ 3118	011 497 3142	Mr K Fick (Kenny)
Cape Town	Western Cape	Mr R vd Merwe (Rudelle)	P O Box 872,8000	021 460 5170	021 465 3642	Ms SP Zondeki (Siyanda)
Klerksdorp	North West	Mr I Jonathan (Isaac)	P O Box 461,2570	018 462 5560	018 462 7751/ 9781	(Falls under Mmabatho)
Mmabatho	North West	Mr S Kubheka (Stanley) 083 496 1509	P Bag X2040, 2735	0183874038/9	0183 84 2597	Mr PJ De Bruyn (Phillip)
East London	Eastern Cape	Mr L Matiwane (Livingstone)	P Bag X9005, 5200	043 701 3066	043 701 3066	Mr LM Nxawe (Lindile)

			5200		3066	
Pietersburg	Northern Province	Mr. Tladi	P Bag X9368, 0700	015 290 1641	015 290 1670	Ms P Maesela (Pinkie)
Port Elizabeth	Eastern Cape	Mr L Hansen (Laurie)	P Bag X6045, 6000	041 506 5000	041 523 588	(Falls under EC)
Pretoria	Gauteng North	Mr C Du Preez (Christo) 083 253 9186	P O Box 393,0001	012 309 5177	012 323 5449	Ms G Gumbi-Masilela (Gabi)
Witbank	Mpumalanga	Mr D Mabunda (Dumisani)	P Bag X7263, 1035	013 655 8798	013 655 8890	Mr P Mothiba (Phineas)
Kimberley	Northern Cape	Mr E Khambula (Edward)	P Bag X5012, 8300	053 838 1500	0	Mr DD Makanda (Dumile)

WET OP BEROEPSGESONDHEID EN VEILIGHEID, 1993 (WET NO. 85 VAN 1993)**DUIKREGULASIES, 2001**

Die Minister van Arbeid het ingevolge artikel 43 van die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993), en na raadpleging met die Adviesraad vir Beroepsgesondheid en Veiligheid, die regulasies in die Bylae uitgevaardig.

BYLAE**Woordomskrywings**

1. In hierdie Regulasies het 'n woord of uitdrukking waaraan in die Wet 'n betekenis geheg is, daardie betekenis en, tensy uit die samehang anders blyk, beteken—

“aangewese mediese praktisyn” 'n geregistreerde mediese praktisyn ingevolge regulasie 4 van hierdie Regulasies aangewys om vas te stel of duikers geskik is om te duik;

“asemhalingsmengsel” lug of gas wat veilig is vir inaseming teen omringende druk;

“bodemtyd” die tyd in minute wat verloop vanaf die tydstip wanneer die duiker vanaf die wateroppervlak na die onderwaterwerkplek duik, totdat hy of sy vanaf die onderwaterwerkplek na die wateroppervlak begin opstyg;

“dekompressiestop” 'n pouse, soos bepaal met behulp van dekompressietabelle, wat op 'n bepaalde diepte onder die wateroppervlak gedurende 'n duiker se opstyging vanaf die onderwaterwerkplek nagekom moet word ten einde oormatige stikstof of ander inerte gasse wat deur sy of haar liggaam opgeneem is, vry te laat, en het dit vir 'n kompressiekamerduik 'n ooreenstemmende betekenis;

“die Wet” die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993);

“duik” elke duik wat deur duikers uitgevoer word vanaf die kontrolepunt op die wateroppervlak na enige punt onder die wateroppervlak en terug na die kontrolepunt;

“duikapparaat” enige tipe duiktoerusting wat 'n persoon kan help om aan enige duikoperasies deel te neem, met uitsluiting van snorkeltipe-apparaat;

“duiker” ‘n persoon wat ingevolge die bepalinge van die regulasie veertien van hierdie Regulasies as ‘n duiker geregistreer is, en sluit dit ook ‘n duikopsigter in;

“duikerslogboek” ‘n logboek in die vorm wat in Aanhangsel A by hierdie Regulasies uiteengesit word;

“duikoperasie” alle werksaamhede van ‘n duikspan ter voorbereiding van, tydens en na ‘n duik;

“duikoperasierekord” die rekord in Aanhangsel B by hierdie Regulasies bedoel;

“duikopsigter” ‘n persoon wat ingevolge regulasie 15 van hierdie Regulasies as ‘n duikopsigter geregistreer is;

“duikplatform” ‘n hangplatform wat ontwerp is om een of meer duikers te dra en wat gebruik word om duikers in die water neer te laat en na die oppervlak te bring wanneer onderwaterdekompressie gedoen word of ‘n standaard duikerpak gebruik word;

“duikspan” die duikers, gereedheidsduikers en duikerondersteuningspersoneel betrokke by ‘n duikoperasie, insluitende die duikopsigter, toubediener, lewensondersteuning-tenikus en die ander persone wat nodig is om enige masjinerie en toerusting wat voor, tydens en na ‘n duik benodig kan word, te beman;

“duiktyd” die tydperk in minute wat verloop vanaf die tydstip wanneer ‘n duiker vanaf die wateroppervlak duik totdat hy of sy weer na ‘n duik aan atmosferiese druk blootgestel word, en sluit dit alle dekompressiestoppe in;

“duikwyse” ‘n duik waarvoor daar skubalug-, skubanitroks-, oppervlakvoorsiendelug-, oppervlakvoorsiendegemengdegas- of versadigingsduikapparaat nodig is, met verwante prosedures en tegnieke;

“gas” enige suiwer gas of gasmengsel, behalwe lug, wat vir onderwater-asemhaling geskik is;

“gereedheidsduiker” ‘n op-datum-duiker wat nie ‘n leerlingduiker is nie, wat ten volle gekwalifiseer is om met behulp van die duikapparaat wat in gebruik is, te duik tot op die maksimum diepte wat deur die bepaalde duikoperasie vereis word, en wat nie deur ‘n oormaat van inerte gas in sy of haar sisteem verhoed word om te duik nie;

"goedgekeurde inspeksie-owerheid" 'n inspeksie-owerheid wat deur die hoofinspekteur goedgekeur is vir die verifikasie, toesig en sertifisering van die ontwerp, vervaardiging, toets, inspeksie en herstel van kompressiekamers en klokke;

"hookah" duiktoerusting bestaande uit 'n lugvoorraad, lugleiding, duikerveiligheidsharnas, demand reguleerder of volle gesigmasker wat slegs deur wetenskaplike, argeologiese en skulpvisduikers gebruik mag word tot op 'n maksimum diepte van vyftien meter;

"kammietou" 'n tou van hoogstens vyf meter lank wat 'n breeksterkte van minstens vyf honderd Newton het, en wat gebruik word om twee duikers tydens 'n duik stewig aan mekaar vas te bind;

"klas I- versadigingsduiker" 'n klas II- oppervlakvoorsiendegemengdegas-duiker wat opgelei is in alle aspekte van gemengdegas-, versadigings- en klokduik tot op 'n diepte van minstens een honderd meter;

"klas II- oppervlakvoorsiendegemengdegas-duiker" 'n klas II- oppervlakvoorsiendelug-duiker wat opgelei is in alle aspekte van gemengdegas-duik met die gebruik van oppervlakvoorsiende duiktoerusting met oop klok en duikplatform, beperk deur dekompressietabelle wat gebruik word (nie-versadigingsduik), tot op dieptes van hoogstens sewentig meter;

"klas II- oppervlakvoorsiendelug-duiker" 'n klas III- oppervlakvoorsiendelug-duiker wat opgelei is in alle aspekte van lugduik met die gebruik van skuba en oppervlakvoorsiende duiktoerusting, natklok- en/of platform- en oppervlakdekompressieprosedures tot op 'n diepte van hoogstens vyftig meter;

"klas III- oppervlakvoorsiendelug-duiker" 'n klas IV- skubaduiker wat opgelei is in alle aspekte van lugduik met die gebruik van skuba- en oppervlakvoorsiende duiktoerusting tot op 'n diepte van hoogstens dertig meter, sonder die gebruik van 'n oppervlakkompressiekamer;

"klas III- oppervlakvoorsienitroks-duiker" 'n klas III- oppervlakvoorsiendelug-duiker wat opgelei is in alle aspekte van nitroksduik met die gebruik van oppervlakvoorsiende duiktoerusting tot op 'n diepte van hoogstens dertig meter, sonder die gebruik van 'n oppervlakkompressiekamer;

"klas IV- skubalugduiker" 'n klas IV- skubalugduiker wat opgelei is in alle aspekte van lugduik met die gebruik van skuba tot op 'n diepte van hoogstens dertig meter, sonder die gebruik van 'n oppervlakkompressiekamer;

“klas IV- skubanitroksduiker” ‘n klas IV- skubalugduiker wat opgelei is in alle aspekte van nitroksduik met die gebruik van skuba tot op ‘n diepte van hoogstens dertig meter, sonder die gebruik van ‘n oppervlakkompressiekamer;

“klok” ‘n kompartement, óf teen omringende druk (oop klok) óf drukvas (geslote klok), waarmee ‘n duiker na en van die onderwaterwerkplek vervoer kan word, wat aan die duiker toegang tot die omringende omgewing verleen en wat tydens duikoperasies as ‘n toevlug gebruik kan word;

“kompressiekamer” ‘n drukkamer vir menslike okkupasie met voldoende interne afmetings om minstens een duiker wat in ‘n horisontale posisie lê sowel as een ander persoon te huisves, en wat daarvoor voorsiening maak dat personeel kan ingaan en kan uitgaan terwyl die okkupante onder druk verkeer;

“kompressiekamerduik” die nabootsing van ‘n werklike duik, tot op spesifieke dieptes, deur die gebruik van ‘n kompressiekamer;

“leerlingduiker” ‘n persoon wat ingevolge regulasie 13 van hierdie Regulasies as ‘n leerlingduiker geregistreer is;

“lewensondersteuningstegnikus” ‘n persoon opgelei in die fisika, fisiologie, mediese en tegniese aspekte van lewensondersteuning in hoëdrukomgewings;

“lug” ook suiwer druklug;

“mediese geskikheidsertifikaat” ‘n sertifikaat deur ‘n aangewese mediese praktisyn uitgereik ingevolge regulasie 4 van hierdie Regulasies;

“mediese ondersoek” ‘n mediese ondersoek van ‘n duiker of ‘n leerlingduiker uitgevoer deur ‘n aangewese mediese praktisyn;

“naelstring” ‘n lewensondersteuningslyn bestaande uit ‘n gastoevoer, pneumodieptemeter en kommunikeerderskabel wat ‘n sterkte gelykstaande met of groter as dié van ‘n veiligheidstou het;

“nitroks” ‘n mengsel van suurstof en stikstof waar die persentasie suurstof in die mengsel groter is as dié van suiwer lug en op enige gegewe tydstip nie ‘n gedeeltelike suurstof druk van 1,6 atmosfeer absoluut te bowe gaan nie;

"noodstelsel" 'n onafhanklike voorraad van die geskikte asemhalingsmengsel wat deur die duiker saamgeneem en geaktiveer word, en van voldoende kapasiteit is om die duiker gedurende 'n noodsituasie toe te laat om 'n plek van veiligheid te bereik;

"onderwater-stemkommunikasiesetelsel" 'n onderwater-stemkommunikasiesetelsel wat die duiker regstreekse stemkontak met die toesighouer op die oppervlak moet toelaat en omgekeerd;

"op-datum-duiker" 'n leerlingduiker of duiker wat die houer is van 'n geldige mediese geskiktheidsertifikaat waarin hy of sy as geskik gesertifiseer word om te duik, en wat vervolgens na die uitreiking daarvan en met tussenposes van hoogstens ses maande, suksesvol deelgeneem het aan 'n in-water-duikoperasie wat nie minder as 'n halfuur geduur het nie;

"oppervlakbeheerpaneel" 'n paneel wat gebruik word om duikoperasies te beheer, wat deur afsonderlike drukmeters die onafhanklike primêre en sekondêre gastoevoer voorsien en aandui;

"oppervlakvoorsiende duiktoerusting" duiktoerusting wat insluit 'n noodstelsel, 'n vollyf-duikerveiligheidsharnas, 'n onderwater-stemkommunikasiesetelsel, 'n oppervlakbeheerpaneel, 'n naelstring en 'n volle gesigmasker of helm waarin die voorraad geskikte asemhalingsmengsel afhanklik is van 'n deurlopende toevoer vanaf die wateroppervlak;

"provinsiale direkteur" die provinsiale direkteur soos omskryf in regulasie 1 van die Algemene Administratiewe Regulasies gepubliseer by *Goewermentskennisgewing* No.R1449 van 6 September 1996;

"Raad" die Duikraad ingevolge regulasie 11 van hierdie Regulasies ingestel;

"SANOP96A" die "South African Naval Operational Publication number 96A"

"skietlyn" 'n tou van minstens vyftien millimeter in deursnee waarvan die een punt by die kontrolepunt op die wateroppervlak vasgemaak is en strek tot by die onderwaterwerkplek, waar die ander punt vasgemaak of geanker is en waarlangs die duiker na die onderwaterwerkplek moet duik en weer na die wateroppervlak moet terugkeer;

"skuba" selfstandige onderwaterasemhalingsapparaat waarin die voorraad asemhalingsmengsel wat deur die duiker gedra word, onafhanklik van enige ander bron is;

"standaard duikerpak" 'n swaargewig oppervlakvoorsiende duikuitrusting vir diep duik;

“toubediener” ‘n persoon wat in die gebruik van duikseine en veiligheidstoue opgelei is, en waar nodig telefoon- en ander dienskabels moet versien;

“veiligheidstou” ‘n tou of iets soortgelyks, minstens agt millimeter in deursnee en met ‘n minimum breeksterkte van vyf kN, waarvan die een punt by die kontrolepunt op die wateroppervlak vasgemaak is en die ander punt gedurende ‘n duik aan die duiker vas is;

“versadigingsduik” ‘n duik uitgevoer deur ‘n duiker wie se weefsels deur die inerte gas van die asemhalingsmengsel versadig is om sodoende vir ‘n verlenging van bodemtyd sonder addisionele dekompressie voorsiening te maak;

“waarskuwingsein” gedurende die dag, vlag A soos in die Internasionale Seinkode omskryf, en gedurende die nag, die ligte soos in die Internasionale Regulasies vir die Voorkoming van Botsings ter See, 1983, omskryf.

Toepassingsbestek

2. (1) Behoudens subregulasie (2) is hierdie Regulasies van toepassing op alle duikoperasies en alle persone betrokke by duikoperasies in die Republiek van Suid-Afrika of sy gebiedswaters: Met dien verstande dat alle duikoperasies uitgevoer deur die Suid-Afrikaanse Weermag ingevolge SANOP96A, en alle persone betrokke by daardie operasies, geag word aan hierdie Regulasies te voldoen het.

(2) Hierdie Regulasies is nie van toepassing nie op persone wat—

- (a) geen duikapparaat gebruik nie;
- (b) duik, maar nie as werknemers wat ‘n taak uitvoer nie;
- (c) duikaktiwiteite vir ontspanning uitvoer; of
- (d) mediese personeel is wat vir doeleindes van terapeutiese behandeling van duiksiektes aan dekompressiekamerduike moet deelneem.

Opleiding van duikers

3. (1) Niemand mag ‘n ander persoon as duiker oplei nie tensy hy of sy kragtens subregulasie (2) as ‘n duikskool goedgekeur is.

(2) Enige persoon wat die personeel, masjinerie, toerusting en ander bykomstige fasiliteite tot sy of haar beskikking het wat hom of haar in staat stel om die leerplan van instruksie en opleiding vir leerlingduikers soos opgestel deur die hoofinspekteur aan te bied, kan skriftelik by

die hoofinspekteur aansoek doen om goedkeuring as 'n duikskool om leerlingduikers op te lei, en die hoofinspekteur kan sodanige aansoek goedkeur, onderworpe aan die voorwaardes wat hy of sy stel.

(3) 'n Leerlingduiker moet—

- (a) onderwaterduikopleiding ondergaan vir die tydperke in subregulasie (5) voorgeskryf en in ooreenstemming met die opleidingsleerplan deur die hoofinspekteur opgestel;
- (b) onder die persoonlike toesig van 'n duikopsigter wees en, terwyl hy of sy duik, vergesel wees van 'n persoon wat ingevolge regulasie 14 van hierdie Regulasies as 'n duiker geregistreer is: Met dien verstande dat, indien die duikopsigter oortuig is dat die leerlingduiker genoeg ondervinding het, die leerlingduiker toegelaat kan word om onbegeleide duike tot op 'n duikdiepte van hoogstens tien meter te onderneem, of dieper as tien meter indien verbind aan 'n veiligheidstou;

(4) 'n Duikopsigter moet toesien dat elke leerlingduiker binne vier-en-twintig uur na die voltooiing van 'n duik wat deur die leerlingduiker uitgevoer is, volle besonderhede van sodanige duik in sy of haar duikerslogboek aanteken en die inskrywing onderteken, waarna die duikopsigter die inskrywing moet mede-onderteken.

(5) 'n Leerlingduiker moet onderwaterduikopleiding ondergaan van minstens—

- (a) vyftien uur bodemtyd, tot op dieptes van hoogstens dertig meter, ten einde vir registrasie as 'n klas IV- skubalugduiker te kwalifiseer;
- (b) vyf uur bodemtyd bykomend opleiding, met die gebruik van nitroksgas, vir 'n klas IV-skubalugduiker tot op 'n diepte van hoogstens dertig meter, ten einde vir registrasie as 'n klas IV-skubanitroksduiker te kwalifiseer;
- (c) twintig uur bodemtyd, tot op dieptes van hoogstens dertig meter, ten einde vir registrasie as 'n klas III- oppervlakvoorsiendelug-duiker te kwalifiseer;
- (d) sewe uur bodemtyd bykomende opleiding, met gebruik van nitroksgas, vir 'n klas III- oppervlakvoorsiendelug-duiker, tot op dieptes van hoogstens dertig meter, ten einde vir registrasie as 'n klas III- oppervlakvoorsiendenitroks-duiker te kwalifiseer;
- (e) vyf-en-dertig uur bodemtyd, tot op dieptes van hoogstens vyftig meter, ten einde vir registrasie as 'n klas II-oppervlakvoorsiendelug-duiker te kwalifiseer; en
- (f) tien uur bodemtyd bykomende opleiding vir 'n klas II-oppervlakvoorsiendelug-duiker, tot op dieptes van meer as dertig meter maar nie meer as sewentig meter

nie, met die gebruik van 'n oop klok en duikplatform, ten einde vir registrasie as 'n klas II-oppervlakvoorsiendegemengdegas-duiker te kwalifiseer.

(6) Niemand word as 'n klas I-versadigingsduiker opgelei nie tensy hy of sy na sy of haar registrasie as 'n klas II- oppervlakvoorsiendegemengdegas-duiker minstens vyftig uur bodemtyd in duikoperasies deurgebring het, waarvan minstens vyftien uur op dieptes van meer as dertig meter deurgebring is.

(7) Om vir registrasie as 'n klas I-versadigingsduiker te kwalifiseer, moet 'n duiker onderwaterduikopleiding van minstens vyftig uur bodemtyd op dieptes van minstens een honderd meter onder die oppervlak ondergaan.

(8) Niemand word as 'n klas I-versadigings-, klas II-oppervlakvoorsiendegemengdegas-, klas II- oppervlakvoorsiendelug-, klas III- oppervlakvoorsiendelug-, klas IV- skubanitroks- of klas IV- skubalugduiker geregistreer nie tensy hy of sy 'n bevredigende standaard van bedrewenheid behaal het ten opsigte van die bykomende aangeleenthede soos in Aanhangsel C by hierdie Regulasies uiteengesit.

Aangewese mediese praktisyns, mediese ondersoeke en mediese geskiktheidsertifikate

4. (1) Die hoofinspekteur kan mediese praktisyns aanwys om die mediese ondersoek van duikers of voornemende duikers te onderneem: Met dien verstande dat slegs mediese praktisyns wat by die Suid-Afrikaanse Raad vir Gesondheidsberoepes geregistreer is en wat 'n hoofinspekteur erkende kursus in onderwatergeneeskunde voltooi het, aangewys word.

(2) 'n Aanwysing kragtens subregulasie (1) verval na 'n tydperk van vier jaar, tensy die betrokke aangewese mediese praktisyn voor die verstryking van sodanige tydperk bewys lewer dat hy of sy 'n deur die hoofinspekteur erkende opknappingskursus in onderwatergeneeskunde voltooi het.

(3) 'n Aangewese mediese praktisyn moet, indien hy of sy daartoe versoek word—

- (a) 'n mediese ondersoek doen wat die toetse insluit wat deur die hoofinspekteur vereis word; en
- (b) 'n mediese geskiktheidsertifikaat wat op die uitslag van die mediese ondersoek gegrond is, aan die duiker of leerlingduiker uitreik, of so 'n sertifikaat na elke mediese herondersoek wat ingevolge subregulasie (4) voorgeskryf word, endosseer.

(4) 'n Duiker moet hom of haar minstens elke twaalf maande vir 'n mediese ondersoek deur 'n aangewese mediese praktisyn aanmeld, en die aangewese mediese praktisyn moet die duiker ondersoek met betrekking tot die aspekte wat deur die vir hoofinspekteur vereis word: Met dien verstande dat wanneer 'n ondersoek van 'n gespesialiseerde aard nodig is, die aangewese mediese praktisyn nie self so 'n ondersoek hoef te doen nie.

(5) 'n Mediese geskikheidsertifikaat moet die volgende aantoon—

- (a) Die naam en identiteitsnommer van die persoon op wie dit betrekking het;
- (b) die datum van die mediese ondersoek;
- (c) die datum van enige X-straalfoto wat vir die doeleindes van die ondersoek geneem is;
- (d) of die persoon geskik geag word om te duik;
- (e) enige beperking op die duike of kompressie waarvoor die persoon geskik geag word;
- (f) die tydperk, wat nie twaalf maande mag oorskry nie, waarvoor die persoon geskik geag word;
- (g) die naam, adres, telefoonnommer en registrasienommer by die Suid-Afrikaanse Raad vir Gesondheidsberoepes van die aangewese mediese praktisyn wat die sertifikaat uitreik, asook die jaar waarin hy of sy laas 'n kursus in onderwatergeneeskunde bygewoon het; en
- (h) die handtekening van die mediese praktisyn wat die sertifikaat uitreik.

(6) Indien 'n duiker weens siekte of besering vir 'n deurlopende tydperk van veertien dae of langer ongeskik was om te duik, mag hy of sy nie weer aan duike deelneem nie en mag niemand van hom of haar vereis of hom of haar toelaat om aan duike deel te neem nie tensy hy of sy 'n mediese sertifikaat aan die werkgewer voorlê wat die aard van sy of haar siekte of besering aandui en waarin 'n mediese praktisyn sertifiseer dat hy of sy van sodanige siekte of besering herstel het: Met dien verstande dat indien die duikopsigter van mening is dat die siekte of besering van 'n duiker van so 'n aard is dat 'n ondersoek deur 'n aangewese mediese praktisyn wenslik is, die duiker nie aan duikwerk mag deelneem nie totdat 'n aangewese mediese praktisyn sertifiseer dat hy of sy weer vir duik geskik is.

(7) Indien daar ingevolge hierdie Regulasie vereis word dat 'n duiker 'n mediese ondersoek ondergaan, is sy of haar werkgewer verantwoordelik vir die reëlings en koste verbonde aan so 'n ondersoek: Met dien verstande dat sodanige werkgewer nie verantwoordelik is ten opsigte

van ondersoek betrefende siekte of beserings wat nie tydens die uitvoering van die duiker se normale pligte opgedoen is nie.

(8) Indien 'n mediese geskikheidsertifikaat verlore raak of vernietig word, moet die betrokke leerlingduiker of duiker hom of haar vir 'n mediese ondersoek ingevolge subregulasie (3) heraanmeld.

Duikopsigter

5.(1) Tensy 'n werkgewer 'n duikopsigter is en persoonlik beheer uitoefen oor van alle duikoperasies deur hom of haar uitgevoer, moet hy of sy een of meer persone skriftelik aanwys om beheer oor sy of haar duikoperasies uit te oefen en toesien dat die bepalings van hierdie Regulasies nagekom word.

(2) 'n Persoon wat ingevolge subregulasie (1) aangewys is, moet 'n duikopsigter wees: Met dien verstande dat 'n werkgewer om die rede en vir die tydperk wat vooraf deur 'n inspekteur goedgekeur word, 'n duiker skriftelik kan aanwys om as duikopsigter op te tree.

(3) 'n Duikopsigter of 'n persoon wat ingevolge subregulasie (2) aangewys is—

- (a) moet te alle tye beskikbaar wees om noodgevalle op die terrein waar duikoperasies uitgevoer word, te hanteer;
- (b) mag nie duik terwyl hy of sy oor ander duikers toesig hou nie;
- (c) moet, wanneer hy of sy vir doeleindes van inspeksie en beplanning moet duik en 'n ander opsigter nie beskikbaar is nie, toesien dat 'n ervare duiker vir die duur van die duik as opsigter optree; en
- (d) mag nie as gereedheidsduiker optree nie tensy 'n ander duikopsigter beskikbaar is om beheer oor die duikoperasie uit te oefen: Met dien verstande dat hy of sy as gereedheidsduiker mag optree vir duikoperasies wat onderneem word tot 'n diepte van hoogstens dertig meter of vir duike wat nie dekompressiestoppe vereis nie.

Operasiehandleiding

6. (1) 'n Werkgewer moet, na oorleg met die werknemers, toesien dat 'n operasiehandleiding opgestel word en voor die aanvang van elke duikoperasie by die duikplek aan elke duikspan beskikbaar gestel word.

(2) 'n Operasiehandleiding moet voorskrifte bevat betreffende die gesondheid en veiligheid van werknemers, insluitende—

- (a) die opdragte en verantwoordelikhede van elke lid van die duikspan vir elke duikwyse wat gebruik word;
- (b) veiligheidsprosedures en oorsiglyste vir elke duikwyse wat gebruik word;
- (c) prosedures en oorsiglyste vir die gebruik, nagaan en instandhouding van toerusting vir elke duikwyse wat gebruik word;
- (d) noodprosedures in die geval van—
 - (i) brand;
 - (ii) toerustingweiering; en
 - (iii) ongunstige veranderinge in omgewingstoestande;
- (e) prosedures vir—
 - (i) die stuur van noodseine;
 - (ii) noodbystand onder water en op die oppervlak;
 - (iii) dekompressie, insluitende terapeutiese rekompresie en dekompressie, en die beskikbaarheid van 'n kompressiekamer vir hierdie doel;
 - (iv) noodhulp;
 - (v) die verkryging van mediese bystand, met spesifieke verwysing na die nodigheid om 'n aangewese mediese praktisyn te raadpleeg indien dekompressiesiekte sou ontstaan;
 - (vi) die ontbied van bystand van nooddienste, insluitende, waar van toepassing, vooraf skakeling met sodanige dienste;
 - (vii) noodontruiming van die werkterrein; en
 - (viii) die voorsiening van noodvoorraad.

Beheer oor duikoperasies

7.(1) Voor die aanvang van duikoperasies moet 'n werkgewer toesien dat—

- (a) 'n risiko-beraming evaluering en 'n gevaaridentifikasie gedoen word om die risikos en gevare vir die gesondheid en veiligheid van enige persoon wat aan 'n duikoperasie deelneem, te identifiseer;
- (b) die personeel wat 'n duiker moet bystaan, asook personeellede wat in 'n noodgeval benodig kan word, op gereedheidsvoet is en dat alle toerusting wat in 'n noodgeval benodig kan word, gereed is vir onmiddellike gebruik;

- (c) persone wat in die gebruik van kompressiekamers opgelei is, beheer uitoefen oor sodanige kamers, aan diens bly terwyl sodanige kamers gebruik word en tydens duikoperasies beskikbaar is;
- (d) 'n duiker wat aan 'n duik deelneem, van al die nodige duiktoerusting voorsien word om sy of haar gesondheid en veiligheid te verseker;
- (e) 'n duiker wat aan 'n duik deelneem, volgens sy of haar logboek gekwalifiseer is om die betrokke duiktoerusting te gebruik;
- (f) alle duiktoerusting wat vir 'n duikoperasie gebruik word, vooraf deur die duikspan nagegaan en getoets word om vas te stel of dit in 'n goeie werkende toestand is;
- (g) die maksimum bodemtyd van 'n duik, die dekompressieskedule en die tegniek wat in enige duikoperasie gebruik gaan word, aan die duikspan bekendgemaak en deur hulle verstaan word;
- (h) die duikspan stelselmatig en deeglik ingelig en opgelei is aangaande die prosedures wat in 'n noodgeval gevolg moet word; en
- (i) wanneer duikoperasies onderneem word, daar voldoende gebergde hoeveelhede mediese suurstof by die duikplek beskikbaar is om 'n noodgeval doeltreffend te hanteer.

(2) Tydens die uitvoer van duikoperasies moet 'n werkgewer toesien dat—

- (a) goeie dissipline deurentyd gehandhaaf word en dat duikoperasies veilig en streng volgens die wyse wat deur die duikopsigter beplan is, uitgevoer word en dat daar streng by die in subregulasie (1)(g) bedoelde bodemtyd en dekompressieskedule gehou word;
- (b) daar vir elke duikoperasie minstens die persone soos per Aanhangsel D by hierdie Regulasies teenwoordig is, tesame met 'n gereedheidsduiker, wat in onmiddellike gereedheid moet wees om te duik en wat tydens die duikoperasie by die kontrolepunt op die wateroppervlak aan diens moet bly: Met dien verstande dat waar daar tegelykertyd twee duikers in die water is en naby genoeg aan mekaar is om in 'n noodgeval met mekaar te kommunikeer en mekaar te help, kan die een geag word 'n gereedheidsduiker vir die ander te wees: Met dien verstande verder dat waar 'n duikklok gebruik word, die gereedheidsduiker (klokman) in die klok moet afdaal tot die diepte waarvandaan werk verrig word en in die klok

moet bly ten einde in staat te wees om onmiddellik hulp te verleen aan die duiker wat vanuit die klok werk;

(c) daar vir enige duik—

(i) minstens een persoon is wat gekwalifiseer is en 'n geldige noodhulpsertifikaat besit om noodhulp te verleen en wat 'n deeglike kennis het van die noodhulpbehandeling wat toegepas moet word en van die gebruik van alle toerusting wat gebruik word in die geval van verdrinking, dekompressiesiekte en ander ongesteldhede wat met duikoperasies verband hou; en

(ii) wanneer versadigings- of klokduike onderneem word, 'n persoon is wat as 'n lewensondersteuningstegnikus gekwalifiseer is;

(d) slegs op-datum-duikers aan duike deelneem;

(e) geen duiker wat hom- of haarself weens ongesteldheid of fisiese of geestelike swakheid ongeskik ag om aan 'n duik deel te neem, of wat deur die duikopsigter daarvoor ongeskik geag word, aan enige duike deelneem of toegelaat of gevra word om aan enige duike deel te neem nie;

(f) wanneer skubaduik uitgevoer word, veiligheidstoue, kammietoue en oppervlakmerkers gebruik word, tensy die duikopsigter en die duiker die gebruik daarvan by die duikligging gevaarlik of onprakties ag, waarna hulle van die gebruik daarvan kan afsien: Met dien verstande dat 'n onderwater-stemkommunikasiestelsel gebruik word, behalwe in die geval van die gereedheidsduiker, wanneer 'n veiligheidstou gebruik moet word: Met dien verstande verder dat wanneer 'n duiker gebruik maak van gasmengsels wat helium bevat 'n spraakverwerkingstel gebruik word;

(g) 'n skietlyn gebruik word indien die duiker nie met 'n duikklok na die onderwaterwerkplek neergelaat word nie, tensy die gebruik van 'n skietlyn onprakties is;

(h) alle stemkommunikasie opgeneem word en die opnames vir 'n tydperk van minstens agt-en-veertig uur gehou word en vir inspeksiedoeleindes aan 'n inspekteur beskikbaar gestel word;

(i) vir duik op 'n diepte van meer as vyftig meter, 'n duikplatform gebruik word, behalwe waar 'n klok voorsien word: Met dien verstande dat 'n klok gebruik moet word vir alle duikoperasies op 'n diepte van meer as sewentig meter, behalwe wanneer 'n duiker 'n standaard duikerpak gebruik of in 'n fisies beperkte ruimte duik: Met dien verstande verder dat 'n geslote klok gebruik

moet word vir alle duikoperasies op 'n diepte van meer as een honderd meter;

- (j) geen duiker 'n duik onderneem nie—
 - (i) wat in stryd is met enige voorwaarde of beperking wat ingevolge hierdie Regulasies aan hom of haar opgelê is; en
 - (ii) tensy hy of sy ten volle vertrouwd is met die werking van sodanige masjinerie en die gebruik van sodanige gereedskap en toerusting as wat in die verrigting van sy of haar werk by die onderwaterwerkplek nodig mag wees;
- (k) geen duiker 'n duik onderneem nie op 'n diepte wat meer is as dit waarvoor die toerusting wat hy of sy gebruik, geskik is;
- (l) geen duiker duik tot 'n diepte wat meer is as dié waarvoor hy of sy gekwalifiseer is nie: Met dien verstande dat 'n klas III- oppervlakvoorsiendenitroks-duiker, klas III- oppervlakvoorsiendelug-duiker, klas IV- skubanitroksduiker en klas IV- skubalugduiker duike tot op 'n diepte van hoogstens vyftig meter kan onderneem indien die dekompressietyd nie twintig minute oorskry nie;
- (m) geen duiker lug of nitroks gebruik vir enige duikoperasie op 'n diepte wat vyftig meter oorskry nie, behalwe waar sodanige gebruik vir terapeutiese of opleidingsdoeleindes in 'n kompressiekamer is;
- (n) daar vir alle duikwyses 'n genoegsame voorraad van die geskikte asemhalingsmengsel teen die vereiste druk gereedlik beskikbaar is om vir die duur van die duikoperasie voorsiening te maak vir al die werksaamhede van die duikspan, uitgesonderd die duiker se noodsilinder;
- (o) alle redelike stappe gedoen word om te verseker dat die lugtoevoer aan duikers suiwer is en voldoen aan die vereistes van die Suid-Afrikaanse Buro vir Standaarde se Gebruikskode vir Draagbare Metaalhouers vir Saamgeperste Gasse, No. 019-1985;
- (p) waar 'n duikoperasie in die nag uitgevoer gaan word—
 - (i) 'n lamp of ander toestel aan die duiker vasgemaak word om sy of haar posisie aan te toon wanneer hy of sy op die oppervlak is; en
 - (ii) die plek op die oppervlak of die klok waarvandaan die duik uitgevoer word, verlig is: Met dien verstande dat waar sodanige verligting ongewens is, dit tydens die duikoperasie afgeskakel kan word;

- (g) dieptemetingstoestelle deur alle duikers gebruik word: Met dien verstande dat waar oppervlakvoorsiende duiktoerusting gebruik word, die diepte van die duiker deur pneumodieptemeters vanaf die oppervlak gemonitor moet word;
- (h) 'n rekord van duikoperasies gehou word soos in Aangangsel B by hierdie Regulasies bedoel, dat dit binne vier-en-twintig uur na voltooiing van die duikoperasie ingevul word, en dit op versoek aan 'n inspekteur beskikbaar gestel word en vir minstens twee jaar na die laaste inskrywing bewaar word;
- (s) elke duiker, binne vier-en-twintig uur na die voltooiing van 'n duik, volledige besonderhede van die duik in sy of haar duikerslogboek, soos bedoel in Aangangsel A by hierdie Regulasies, aanteken en dat die inskrywing deur die duiker onderteken en deur die duikopsigter mede-onderteken word;
- (t) die toepaslike waarskuwingseine gegee en die toepaslike tekens opvallend vertoon word terwyl duikwerk aan die gang is;
- (u) 'n boot gereedelik beskikbaar gehou word vir reddingsdoeleindes indien die moontlikheid bestaan dat die duiker tydens die verloop van 'n duik weg van die kontrolepunt af kan opkom; en
- (v) alle ander redelike veiligheidsmaatreëls getref word wat nodig kan wees vir die veilige uitvoering van enige spesifieke duikoperasie, en dat die veiligheidsmaatreëls streng nagekom word.

Dekompressie

8.(1) 'n Werkgewer moet toesien dat geen vuurhoutjies, sigaretaanstekers, rooktoebehore of enige ander vlambare artikels wat moontlik 'n brand of 'n ontploffing kan veroorsaak, te eniger tyd in die kompressiekamers ingebring of gebêre word nie.

(2) Geen werkgewer mag vereis of toelaat dat enige duiker in sy of haar diens 'n duik uitvoer nie, en geen duiker mag 'n duik uitvoer nie, tensy dekompressie gedoen word in ooreenstemming met die tegnieke, dekompressietabelle en dekompressietye soos deur die duikopsigter bepaal.

(3) 'n Werkgewer moet toesien dat 'n volledige afskrif van die in subregulasie (2) bedoelde dekompressietabelle, tesame met die tersaaklike verklarende prosedures, ter inligting van die duikspan beskikbaar is op die plek waar duikoperasies uitgevoer word: Met dien verstande dat uittreksels uit die dekompressietabelle ter inligting van die duikspan beskikbaar gestel kan word

en dat die werkgewer die toepaslike herkenbare dekompressietabelle moet toon indien aldus deur 'n inspekteur versoek.

(4) Behoudens regulasie 8 van die Algemene Administratiewe Regulasies wat op 6 September 1996 by Goewermentskennisgewing No. R. 1449 van 6 September 1996 gepubliseer is, moet 'n werkgewer toesien dat 'n rekord, wat ter insae van 'n inspekteur beskikbaar moet wees, van alle voorvalle van dekompressiesiekte gehou word en moet hy of sy toesien dat alle sodanige voorvalle ondersoek word.

Kompressiekamers en klokke

9.(1) Niemand mag enige kompressiekamer of klok gebruik, of beveel of toelaat dat dit gebruik word nie, tensy—

- (a) dit ontwerp en vervaardig is ooreenkomstig die gesondheids- en veiligheidstandaard wat ingevolge artikel 44 van die Wet by hierdie Regulasies ingelyf is;
- (b) dit onder toesig van 'n goedgekeurde inspeksie-owerheid vervaardig is; en
- (c) hy of sy in besit is van 'n vervaardigingssertifikaat wat deur die vervaardiger uitgereik is en waarin daar gesertifiseer word dat die kompressiekamer of klok in alle opsigte in ooreenstemming met die in subregulasie (1)(a) bedoelde standaard ontwerp, vervaardig en getoets is: Met dien verstande dat sodanige vervaardigingssertifikaat deur die goedgekeurde inspeksie-owerheid mede-onderteken moet word as bewys dat sodanige kompressiekamer of klok ooreenkomstig die tersaaklike standaard ontwerp, vervaardig, getoets en geverifieer is.

(2) 'n Werkgewer moet toesien dat elke kompressiekamer—

- (a) 'n onbesoedelde voorraad asemhalingsmengsel het wat vir een volledige terapeutiese kompressiebehandeling genoegsaam is en in silinders of ander geskikte houers by die kompressiekamer beskikbaar is;
- (b) toegerus is met drukverligtingstoestelle wat gestel is om te voorkom dat die interne druk in enige kompartement hoër as tien persent bo die maksimum beoogde werkdruk styg en wat ontwerp is om outomaties toe te gaan wanneer die interne druk tot die beoogde werkdruk terugkeer het na die drukverligting;

- (c) toegerus is met 'n asemhalingspunt vir elke insittende vir geredelike gebruik tydens 'n kompressie-operasie, asook met geskikte middele om suurstofopbou in die kamer te verhoed;
- (d) voorsien is van patryspoorte wat groot genoeg is dat almal in die kamer van buite af waargeneem kan word;
- (e) toegerus is vir voldoende humiditeitsbeheer, verhitting, verkoeling en verligting van die binnekant;
- (f) toegerus is met die nodige kleppe, meters en ander toebehore wat die interne druk van elke kompartement vanaf die buitekant van die kamer aandui en beheer;
- (g) voorsien is van 'n tweerigting- mondelinge kommunikasiestelsel vir gebruik tussen persone buite en binne die kamer;
- (h) ontwerp is om die gevaar van brand te beperk en toegerus is om 'n brand aan die binnekant te bestry;
- (i) 'n minimum ontwerp-drukbedryfsvermoë van ses honderd kPa het vir duikoperasies wat nie 'n diepte van negentig meter oorskry nie: Met dien verstande dat vir duikoperasies van dieper as negentig meter die ontwerp-drukbedryfsvermoë van die kompressiekamer gelyk moet wees aan die maksimum diepte van die duikoperasie: Met dien verstande verder dat waar 'n geslote duikklok gebruik word wat toegerus is om op die oppervlak rekompresie gelyk aan die diepte van die duikoperasie te ondergaan, die minimum ontwerp-drukbedryfsvermoë van die kompressiekamer ses honderd kPa moet wees;
- (j) ontwerp is om die oopmaak daarvan onder druk te verhoed en, waar nodig, vir hierdie doel van grendels voorsien is;
- (k) so toegerus is dat alle geïnstalleerde sluittoestelle van albei kante van 'n geslote luik bedryf kan word;
- (l) so ontwerp is dat, indien 'n geslote klok gebruik word, 'n persoon onder druk vervoer kan word vanaf die kompressiekamer na die klok en van die klok na die kompressiekamer; en
- (m) toegerus is met toerusting en reserwefasiliteite wat voldoende is om die korrekte asemhalingsmengsel aan alle persone in die kompressiekamer te voorsien en dit te handhaaf.

(3) 'n Werkgewer moet toesien dat elke geslote duikklok—

- (a) op so 'n wyse toegerus is dat 'n duiker die klok sonder moeite kan binnegaan en verlaat;

- (b) toegerus is met deure wat as drukseëls dien en wat van albei kante af oopgemaak kan word;
- (c) toegerus is met sodanige kleppe, meters en ander toebehore, wat van geskikte materiale gemaak is, as wat nodig is om die druk binne die klok aan te dui en te beheer en om vir die insittendes en die duikopsigter aan te dui wat die eksterne druk op die klok is;
- (d) toegerus is met toerusting en reserwefasiliteite wat voldoende is om die korrekte asemhalingsmengsel te voorsien aan persone wat binne die klok is of vanuit die klok werk;
- (e) toegerus is met 'n mondelingse kommunikasiestelsel wat dit moontlik maak om kontak te handhaaf tussen 'n duiker wat die klok verlaat, 'n persoon wat daarin agterbly en die plek op die wateroppervlak vanwaar die duikoperasie uitgevoer word;
- (f) toegerus is met toerusting om die klok te verhit en te verlig;
- (g) voldoende noodhulpfasiliteite bevat en toegerus is met hystoerusting waarmee 'n persoon wat in die klok is, 'n bewustelose of beseerde duiker in die klok kan inhys;
- (h) op so 'n wyse toegerus is dat—
 - (i) dit seine deur die water kan stuur sodat dit in 'n noodgeval spoedig opgespoor kan word; en
 - (ii) die lewens van persone wat daarbinne vasgevang is, vir ten minste vier-en-twintig uur behou kan word;
- (i) gebruik word saam met hysapparaat waarmee die klok sonder uitermatige sywaartse, vertikale of roterende beweging neergelaat kan word tot op die diepte van waar die duikoperasies uitgevoer gaan word, en waarmee dit in daardie posisie gehou of opgetrek kan word; en
- (j) toegerus is met toerusting waarmee dit sonder gebruik van die hoofophysapparaat na die oppervlak teruggebring kan word: Met dien verstande dat waar sodanige toerusting die storting van gewigte behels, die gewigte deur 'n persoon binne die duikklok gestort moet kan word en die toerusting so ontwerp moet wees dat dit toevallige storting voorkom.

(4) 'n Werkgewer moet toesien dat elke kompressiekamer of klok geïnspekteer, getoets en in stand gehou word ooreenkomstig die bepalings van die Gesondheids- en Veiligheidsstandaard wat vir die ontwerp en vervaardiging van sodanige kompressiekamer of klok gebruik word: Met dien verstande dat waar sodanige Gesondheids- en Veiligheidsstandaard geen sodanige

bepalings bevat nie, die inspeksies, toetse en instandhouding uitgevoer moet word deur 'n persoon wat bevoeg is om sodanige inspeksies, toetse en instandhouding uit te voer uit hoofde van sy of haar opleiding en ervaring waarvoor daar in die "Lloyds Register of Shipping Rules and Regulations for the Construction and Classification of Submersibles and Diving Systems" voorsiening gemaak word: Met dien verstande verder dat waar 'n werkgewer voornemens is om herstelwerk aan 'n kompressiekamer of klok te doen, hy of sy vooraf by 'n goedgekeurde inspeksie-owerheid moet vasstel wat die vereistes met betrekking tot sodanige herstelwerk is, en sodanige herstelwerk onder toesig van 'n goedgekeurde inspeksie-owerheid moet doen.

Masjinerie en toerusting

10. 'n Werkgewer moet toesien dat—

- (a) alle duiktoerusting en masjinerie wat in verband met enige duikoperasie of onderwaterwerk gebruik word, in ooreenstemming met 'n Gesondheids- en Veiligheidsstandaard ontwerp, vervaardig en in stand gehou word, dat dit in goeie werkende toestand gehou word en dat behoorlik gebruik word;
- (b) masjinerie en toerusting wat nodig is vir duikers om die water veilig in te gaan en te verlaat, tydens duikoperasies beskikbaar is; en
- (c) 'n kompressiekamer met alle nodige bykomende toerusting vir onmiddellike gebruik beskikbaar is wanneer 'n duik ook al plaasvind op 'n diepte van meer as —
 - (i) vyftig meter;
 - (ii) tien meter, maar nie meer as vyftig meter nie, waar die roetine dekompressietyd twintig minute oorskry; of
 - (iii) tien meter, maar nie meer as vyftig meter nie, waar die roetine dekompressietyd twintig minute of minder is en daar nie doeltreffende reëlins getref is nie om 'n duiker wat terapeutiese rekompresie benodig, na 'n geskikte kamer te bring binne twee uur vanaf die tyd dat die behoefte vir rekompresie vasgestel is; en
- (d) elke kompressiekamer wat voor 4 Januarie 1991 geregistreer is, indien dit ooreenkomstig regulasie 9(4) van hierdie Regulasies in stand gehou word, gebruik mag word totdat dit nie meer bruikbaar is nie.

Duikraad

11.(1) Die hoofinspekteur moet 'n Duikraad instel wat bestaan uit—

- (a) 'n amptenaar van die Departement, wat die voorsitter is;

- (b) een inspekteur;
- (c) een persoon wat die Departement van Minerale en Energie verteenwoordig;
- (d) 'n aangewese mediese praktisyn;
- (e) een duiker;
- (f) een werkgewer;
- (g) een opsigter.

Met dien verstande dat die hoofinspekteur die raad kan magtig om persone te koöpteer wat spesialekennis het van die aangeleenthede wat deur die Raad hanteer word.

(2) Die hoofinspekteur stel die lede van die Raad aan vir die tydperk wat hy of sy by aanstelling bepaal: Met dien verstande dat die hoofinspekteur 'n lid te eniger tyd mag ontslaan en 'n nuwe lid in sy of haar plek mag aanstel.

(3) Die Raad moet—

- (a) aanbevelings doen en verslae aan die hoofinspekteur voorlê rakende enige aangeleentheid wat met hierdie Regulasies verband hou;
- (b) die hoofinspekteur adviseer aangaande enige aangeleentheid wat deur die hoofinspekteur na die Raad verwys word;
- (c) die ander funksies verrig wat deur die hoofinspekteur aangevra word;
- (d) appêlle teen besluite van die Raad na die hoofinspekteur verwys; en
- (e) sy werk verrig ooreenkomstig die instruksies en gedragsreëls wat die hoofinspekteur opstel.

(4) Iemand wat deur enige besluit van die Raad geraak word, mag by die hoofinspekteur teen so 'n besluit appelleer, en die hoofinspekteur se besluit is finaal en bindend.

Reëls, leerplanne en eksamens

12.(1) Die hoofinspekteur moet, soos omstandighede dit vereis, in oorleg met die Raad reëls vir die aflê van eksamens, en leerplanne vir sodanige eksamens, saamstel of wysig.

Registrasie as leerlingduiker

13. Enige persoon wat die hoofinspekteur tevrede stel dat hy of sy—

- (a) minstens 18 jaar oud is;

- (b) in besit is van 'n geldige mediese geskiktheidsertifikaat waarin hy of sy gesertifiseer word as geskik om te duik; en
- (c) tot die goedgekeurde duikskool toegelaat is,

moet deur die hoofinspekteur as 'n leerlingduiker geregistreer word en van 'n registrasiesertifikaat voorsien word wat vir een jaar geldig is en na goeddunke deur die hoofinspekteur hernu kan word.

Registrasie as duiker

14. Enige persoon wat die hoofinspekteur tevrede stel dat hy of sy—

- (a) toepaslike opleiding in duikoperasies ontvang het by 'n organisasie goedgekeur vir die opleiding van duikers soos bedoel in regulasie 3 van hierdie Regulasies;
- (b) die tersaaklike eksamen vir duikers geslaag het;
- (c) in besit is van 'n vlak I-duiknoodhulpkwalifikasie; en
- (d) in besit is van 'n geldige mediese geskiktheidsertifikaat waarin hy of sy as geskik gesertifiseer word om aan duik deel te neem, moet geregistreer word as 'n klas I-versadigings-, klas II-oppervlakvoorsiendegemengdegas-, klas II-oppervlakvoorsiendelug-, klas III oppervlakvoorsiendenitros-, klas III-oppervlakvoorsiendelug-, klas IV-skubanitroks- of klas IV-skubalugduiker, na gelang van die geval, en die hoofinspekteur moet hom of haar van 'n registrasiesertifikaat voorsien, onderworpe aan die voorwaardes of beperkings wat die hoofinspekteur nodig ag.

Registrasie as duikopsigter

15. Enige persoon wat die hoofinspekteur tevrede stel dat hy of sy—

- (a) minstens twee jaar ondervinding in alle aspekte van duikoperasies opgedoen het nadat hy of sy as 'n klas I-versadigingsduiker en lewensondersteuningtegnikus, klas II-oppervlakvoorsiendegemengdegas- of klas II-oppervlakvoorsiendelug-duiker geregistreer is, en dat hy of sy minstens een jaar sodanige ondervinding opgedoen het nadat hy of sy as 'n klas III-oppervlakvoorsiendenitros-duiker, klas III oppervlakvoorsiendelug-duiker, of 'n klas IV-skubanitroksduiker of 'n klas IV-skubalugduiker geregistreer is;
- (b) in besit is van 'n vlak III-noodhulpkwalifikasie; en
- (c) in die tersaaklike eksamen vir duikopsigters geslaag het,

moet geregistreer word as 'n klas I-versadigings-, klas II-oppervlakvoorsiende-gemengdegas-, klas II- oppervlakvoorsiendelug-, klas III-oppervlakvoorsiendenitroks-, klas III-oppervlakvoorsiendelug-, klas IV-skubanitroks- of klas IV-skubalugduikopsigter, na gelang van die geval, en die hoofinspekteur moet hom of haar van 'n registrasiesertifikaat voorsien, onderworpe aan die voorwaardes of beperkings wat die hoofinspekteur nodig ag.

Aansoeke

16.'n Aansoek om registrasie as 'n leerlingduiker, duiker, duikopsigter, of om die heruitreiking van 'n sertifikaat wat verlore geraak het of beskadig of vernietig is, moet gedoen word in die vorm en op die wyse deur die hoofinspekteur goedgekeur.

Intrekking van registrasiesertifikaat

17.(1) Behoudens subregulasie (2), kan die hoofinspekteur 'n registrasiesertifikaat wat aan 'n leerlingduiker, duiker of duikertoesighouer uitgereik is, intrek indien sodanige leerlingduiker duiker, of toesighouer—

- (a) nie meer aan die voorwaardes in onderskeidelik regulasie 13, 14 en 15 bedoel, voldoen nie; of
- (b) aan 'n misdryf soos beoog in regulasie 19 skuldig bevind is.

(2) Die hoofinspekteur kan nie 'n registrasiesertifikaat intrek nie, tensy hy of sy die houer van sodanige registrasiesertifikaat—

- (a) van die beoogde intrekking daarvan en van die gronde waarop dit gebaseer is, in kennis gestel het; en
- (b) geleentheid gegee het om sy of haar saak te stel en, as die houer 'n persoon is soos in subregulasie (1)(a) bedoel, die houer geleentheid gegee is om binne die tydperk soos deur die hoofinspekteur gespesifiseer, aan daardie voorwaardes te voldoen.

(3) Die hoofinspekteur moet die betrokke persoon skriftelik in kennis stel van die redes vir sy of haar besluit.

(4) Enige persoon wat deur die besluit van die hoofinspekteur benadeel is, kan skriftelik by die Direkteur-general teen daardie besluit appél aanteken.

(5) Sodanige appél moet—

- (a) ingedien word binne sestig dae vanaf die datum waarop die besluit bekend gemaak is; en
- (b) die gronde van die appél uiteensit.

(6) Na oorweging van die gronde vir appél en die hoofinspekteur se redes vir sy of haar besluit, moet die Direkteur-general so gou moontlik die besluit bekragtig, tersyde stel of wysig.

Gelde betaalbaar

18. Die gelde betaalbaar ten opsigte van 'n aansoek bedoel in regulasie 16 van hierdie Regulasies, moet van tyd tot tyd deur die Minister bepaal word, na raadpleging met die Minister van Finansies, by kennisgewing in die *Staatskoerant* en is betaalbaar in die vorm van ongekanselleerde inkomsteseëls.

Misdrywe en strawwe

19. 'n Persoon wat enige bepalings vervat in regulasies 3 tot 10 oortree of versuim om daaraan te voldoen, is aan 'n misdryf skuldig en by skuldigbevinding strafbaar met 'n boete of met gevangenisstraf vir 'n tydperk van hoogstens twaalf maande en, in die geval van 'n voortdurende misdryf, met 'n bykomende boete van twee honderd rand of bykomende gevangenisstraf van een dag vir elke dag waarop die misdryf voortduur: Met dien verstande dat die duur van sodanige bykomende gevangenisstraf nie negentig dae oorskry nie.

Herroeping

20. Die Duikregulasies gepubliseer ingevolge Goewermentskennisgewing No. R.343 van 22 Februarie 1991 word hierby herroep.

Kort titel

21 Hierdie Regulasies heet die Duikregulasies, 2001.

No. R. 12**11 Januarie 2002**

Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993)
Opname van Gesondheid- en Veiligheidsstandaarde in Duikregulasies, 2001

Kragtens artikel 44 van die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1992), neem ek, Membathisi Mphumzi Shepherd Mdladlana, Minister van Arbeid, hierby die Suid-Afrikaanse Buro vir Standaarde se Gebruikskode vir Draagbare Metaalhouers vir Drukgas, SABS 019-1985, die "American Society of Mechanical Engineers. Safety Standard for Pressure Vessels for Human Occupancy, ANSI/ASME PVHO-1-1997", "Lloyd's Register of Shipping. Rules and Regulations for the Construction and Classification of Submersibles and diving systems, Lloyd's Register of Shipping, London, UK 1989", "Germanischer Lloyd. Rules for Classification and Construction, III - Offshore Technology, Part 1 – Underwater Technology, Germanischer Lloyd, Hamburg, Germany, 2000", "De Norske Veritas. Rules for certification of Diving Systems, De Norske Veritas, Hovik, Norway, 1988". en die "American Bureau of Shipping. Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities, American Bureau of Shipping, New York, U.S.A. 1979" in die Duikregulasies, 2001, op.

M M S MDLADLANA
MINISTER VAN ARBEID

AANHANGSEL A

(op die voorblad)

DUIKERSLOGBOEK

1. Hierdie logboek moet op versoek van 'n inspekteur vir inspeksie getoon word.
2. Die houer van hierdie logboek moet hierin 'n volledige verslag invul van elke duikoperasie wat deur hom of haar onderneem is, die verslag onderteken en dit deur die duikopsigter laat mede-onderteken.
3. Die logboek moet deur die houer daarvan op 'n veilige plek bewaar word.

PERSOONLIKE GEGEWENS VAN DIE DUIKER

(aan die binnekant van die voorblad)

Volle naam:

Identiteitsnommer:

Klas duiker

Beperkings

.....

.....

.....

.....

.....

.....

Tipe duiktoerusting waarvoor duiker gekwalifiseer is:

Tipe toerusting

Datum

Duikopsigter

(1).....

(2).....

(3).....

(4).....

(5).....

Naam van werkgewer:

Datum

(1).....

.....

(2)

.....

(3).....

.....

BESONDERHEDE VAN DUIKOPERASIES

(op elke daaropvolgende bladsy)

Datum van duikoperasie

Naam van opsigter

Naam van gereedheidsduiker

Naam van kammieduiker

Plek

Aard van duik

Diepte

Duiktoerusting

Asemhalingsmengsel

Tyd oppervlakte verlaat

Bodemtyd

Tyd oppervlakte bereik

Duiktyd

Dekompressieskedule

Opmerkings

.....

.....
Duiker.....
Duikopsigter

AANHANGSEL B**REKORD VAN DUIKOPERASIES**

- Naam en adres van die maatskappy/instelling
- Ligging, tyd en datum van duikoperasies
- Name van die duikopsigter, duiker, gereedheidsduiker en toubediener
 - Diepte van duik
 - Tyd wat oppervlakte verlaat is (per duiker)
 - Bodemtyd
 - Tyd wat oppervlakte bereik is (per duiker)
 - Geraamde watertemperatuur en warmtebeskerming gebruik
 - Omgewingstoestande (geraamde toestand van die see en onderwatersig en -strome)
 - Dekompressietabelle en –skedule
 - Tyd wat verloop het sedert vorige blootstelling aan druk, indien minder as vier-en-twintig uur of herhalende duikopdragte
 - Asemhalingsmengsel gebruik en samestelling daarvan
 - Tipe werk gedoen
 - Tipe duiktoerusting gedra deur duiker(s)
 - Enige buitengewone toestande, bv. besoedelde water

Vir elke duiker van wie daar vermoed word dat hy of sy dekompressiesiekte het of by wie simptome daarvan sigbaar is, moet die volgende bykomende inligting opgeteken en bygehou word:

- Beskrywing van dekompressiesiektesimptome, insluitende diepte en tyd toe dit begin het
- Beskrywing en resultate van behandeling.

AANHANGSEL C**REGULASIE 3(8) VAN DIE DUKREGULASIES, 2001**

1. **Die volgende is bykomende aangeleenthede ten opsigte waarvan 'n klas I-
versadigingsduiker 'n bevredigende standaard van bevoegdheid moet bereik:**
 - (a) Die teorie van gemengdegas-, versadigings- en klokduik.
 - (b) Gasse en gasstelsels.
 - (c) Om vanaf 'n duikklok veilig en bedrewe dieper as sewentig meter te duik.
 - (d) Die gebruik van duikerkommunikasiestelsels toepaslik vir gemengdegas-, versadigings- en klokduike.
 - (e) Die bedryf van die duikklok, prosedures vir uitsluit en hertoegang, oorstap na 'n oppervlakkompressiekamer, rekompresie op gemengde gas, dekompressie en dekompressietabelle toepaslik vir gemengdegas-, versadigings- en klokduik.
 - (f) Noodprosedures vir gemengdegas-, versadigings- en klokduik.
 - (g) Noodhulp toepaslik vir noodgevalle wat by gemengdegas-, versadigings- en klokduik voorkom.
 - (h) Tersaaklike wetgewing en leiding.
 - (i) Toepaslike praktiese opleiding vir diep duik.
2. **Die volgende is aangeleenthede ten opsigte waarvan klas II-
oppervlakvoorsiendegemengdegas-duiker 'n bevredigende standaard van
bevoegdheid moet bereik:**
 - (a) Die teorie van gemengdegas- en klokduik.
 - (b) Gasse en gasstelsels.
 - (c) Om met behulp van 'n platform en oop klok veilig en bedrewe in verskillende toestande tot op 'n diepte van hoogstens sewentig meter te duik.
 - (d) Die gebruik van duikerkommunikasiestelsels toepaslik vir gemengdegas- en klokduik.
 - (e) Duikklokoperasies, rekompresie op gemengde gas, dekompressie en dekompressietabelle toepaslik vir gemengdegas- en klokduik.
 - (f) Noodprosedures vir gemengdegas- en klokduik.
 - (g) Noodhulp toepaslik vir noodgevalle wat by gemengdegas- en klokduik voorkom.

- (h) Tersaaklike wetgewing en leiding.
- (i) Oppervlakkompressiekameroperasies en terapeutiese rekompresie toepaslik vir gemengdegas-duik.
- (j) Toepaslike praktiese opleiding vir diep duik.

3. **Die volgende is aangeleenthede in verband waarmee 'n klas II-oppervlakvoorsiendelug-duiker 'n bevredigende standaard van bevoegdheid moet bereik:**

- (a) Die teorie van lugduik.
- (b) Gebruik van skuba- en oppervlakvoorsiende duiktoerusting.
- (c) Om veilig en bedrewe in verskillende toestande tot op 'n diepte van hoogstens vyftig meter te duik, insluitende die veilige gebruik van handgereedskap, kraggereedskap en -toerusting.
- (d) Die gebruik van duikerkommunikasiesistelsels toepaslik vir lugduik.
- (e) Noodprosedures vir lugduik.
- (f) Oppervlakkompressiekameroperasies, terapeutiese rekompresie, dekompressie en dekompressietabelle toepaslik vir lugduik.
- (g) Noodhulp toepaslik vir noodgevalle wat by lugduik voorkom.
- (h) Tersaaklike wetgewing en leiding.
- (i) Toepaslike praktiese opleiding vir diep duik.

4. **Aangeleenthede ten opsigte waarvan 'n klas III-oppervlakvoorsienitroks-duiker 'n bevredigende standaard van bevoegdheid moet bereik, is dié aangeleenthede wat vir 'n klas III-oppervlakvoorsiendelug-duiker gespesifiseer is, insluitende die volgende:**

- (a) Die teorie van nitroksduik tot op dertig meter.
- (b) Gasse en gasstelsels toepaslik vir nitroks op oppervlakvoorsiening.
- (c) Dekompressietabelle en rekompresie.
- (d) Noodprosedures vir nitroks op oppervlakvoorsiening.
- (e) Noodhulp toepaslik vir noodgevalle wat by nitroksduik voorkom.
- (f) Toepaslike praktiese opleiding vir duik met oppervlakvoorsienitroks-toerusting.

5. **Die volgende is aangeleenthede ten opsigte waarvan 'n klas IV-oppervlakvoorsiendelug-duiker 'n bevredigende standaard van bevoegdheid moet bereik:**
- (a) Die teorie van lugduik.
 - (b) Gebruik van oppervlakvoorsiendelug-duiktoerusting.
 - (c) Die gebruik van skuba (voltooi sillabus van klas IV-skubaduiker).
 - (d) Om veilig en bedrewe in verskillende toestande tot op dieptes van hoogstens dertig meter te duik.
 - (e) Die gebruik van duikerkommunikasiesistelsels toepaslik vir lugduik.
 - (f) Noodprosedures vir lugduik.
 - (g) Oppervlakkompressiekamer-operasies, terapeutiese rekompresie, dekompressie en dekompressietabelle toepaslik vir lugduik.
 - (h) Noodhulp toepaslik vir noodgevalle wat by lugduik voorkom.
 - (i) Tersaaklike wetgewing en leiding.
 - (j) Toepaslike praktiese opleiding vir diep duik.
6. **Aangeleenthede ten opsigte waarvan 'n klas IV-skubanitroksduiker 'n bevredigende standaard van bevoegdheid moet bereik, is dié aangeleenthede wat vir 'n klas IV-skubalugduiker gespesifiseer is en die volgende insluit:**
- (a) Die teorie van nitroksduik tot op dertig meter.
 - (b) Gasse en gasstelsels toepaslik vir nitroks op oppervlakvoorsiening.
 - (c) Dekompressietabelle en rekompresie.
 - (d) Noodprosedures vir nitroks op skuba.
 - (e) Noodhulp toepaslik vir noodgevalle wat by nitroksduik voorkom.
 - (f) Toepaslike praktiese opleiding vir duik met skubanitrokstoerusting.
7. **Die volgende is aangeleenthede ten opsigte waarvan 'n klas IV-skubalugduiker 'n bevredigende standaard van bevoegdheid moet bereik:**
- (a) Die teorie van lugduik.
 - (b) Gebruik van skuba.
 - (c) Om veilig en bedrewe in verskillende toestande tot op dieptes van hoogstens dertig meter te duik.
 - (d) Die gebruik van duikerkommunikasiesistelsels toepaslik vir lugduik.

- (e) Noodprosedures vir lugduik.
- (f) Terapeutiese rekompresie, dekompressie en dekompressietabelle toepaslik vir lugduik.
- (g) Noodhulp toepaslik vir noodgevalle wat by lugduik voorkom.
- (h) Tersaaklike wetgewing en leiding.
- (i) Toepaslike praktiese opleiding vir skubaduik.

AANHANGSEL D

MINIMUM PERSONEELVEREISTES

DIEPTE-VELD	SKUBA-LUG	SKUBA-NITROKS	SLEGS HOOKAH, WETENSK., ARG. EN SKULPVIS	OPPERVLAK- VOORSIENDE LUG	OPPERVLAKVO OR-SIENDE GEMENGDE GAS	VERSADIGINGS- DUIK
0 – 15 m	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter (soos omskryf)	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter (soos omskryf)	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter (soos omskryf)	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter (soos omskryf)	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter (soos omskryf) 1 x Gas-tegnikus	Sien lys op laaste bladsy
15 – 30 m	1 x Duiker 1 x Toubediener	1 x Duiker 1 x Toubediener	GEEN DUIK TOEGE-LAAT NIE	1 x Duiker 1 x Toubediener	1 x Duiker 1 x Toubediener	

	1 x Gereedheids- duiker 1 x Duikopsigter	1 x Gereedheids- duiker 1 x Duikopsigter		1 x Gereedheids- duiker 1 x Duikopsigter	1 x Gereedheids- duiker 1 x Duikopsigter 1 x Gas-tegnikus	
30 – 50 m	2 x Duikers (vas met kammietou) 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter	2 x Duikers (vas met kammietou) 1 x Toubediener 1 x Gereedheids- duiker 1 x Duikopsigter	GEEN DUK TOEGELAAT NIE	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Gereedheids- bediener 1 x Duikopsigter	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Gereedheids- bediener 1 x Duikopsigter 1 x Gastegnikus	

50 – 70 m	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	1 x Duiker 1 x Toubediener 1 x Gereedheids- duiker 1 x Gereedheids- toubediener 1 x Duikopsigter 1 x Gastegnikus	
70 – 100 m	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	GEEN DUIK TOEGELAAT NIE	1 x Duiker 1 x Toubediener 2 x Gereedheids- duikers 1 x Duikopsigter 1 x Gastegnikus 1 x Duiker (mediese beampte) 2 x LOT

MINIMUM VERSADIGINGSDUIKBEMANNINGSVLAKKE VIR TWEE DAE

- 1 x Duikopsigter
- 2 x Lewensondersteuningtegnici (LOT)
- 2 x Duikers in versadiging
- 1 x Gereedheidsduiker (Duiker mediese tegnikus)

- 1 x Meganiese tegnikus
- 1 x elektriese tegnikus

SES DUIKERS

- 2 x Duikopsigters
- 2 x Lewensondersteuningtegnici
- 4 x Duikers in versadiging
- 1 x Gereedheidsduiker (Duiker mediese tegnikus)
- 1 x Meganiese tegnikus
- 1 x elektriese tegnikus

Bogemelde bemanningsvlakke is die absolute minimum. Bykomende personeel sal nodig wees indien versadigingspan vergroot.

VIER DUIKERS

- 2 x Duikopsigters
- 2 x Lewensondersteuningtegnici
- 4 x Duikers in versadiging
- 1 x Gereedheidsduiker (Duiker mediese tegnikus)
- 1 x Meganiese tegnikus
- 1 x Elektriese tegnikus

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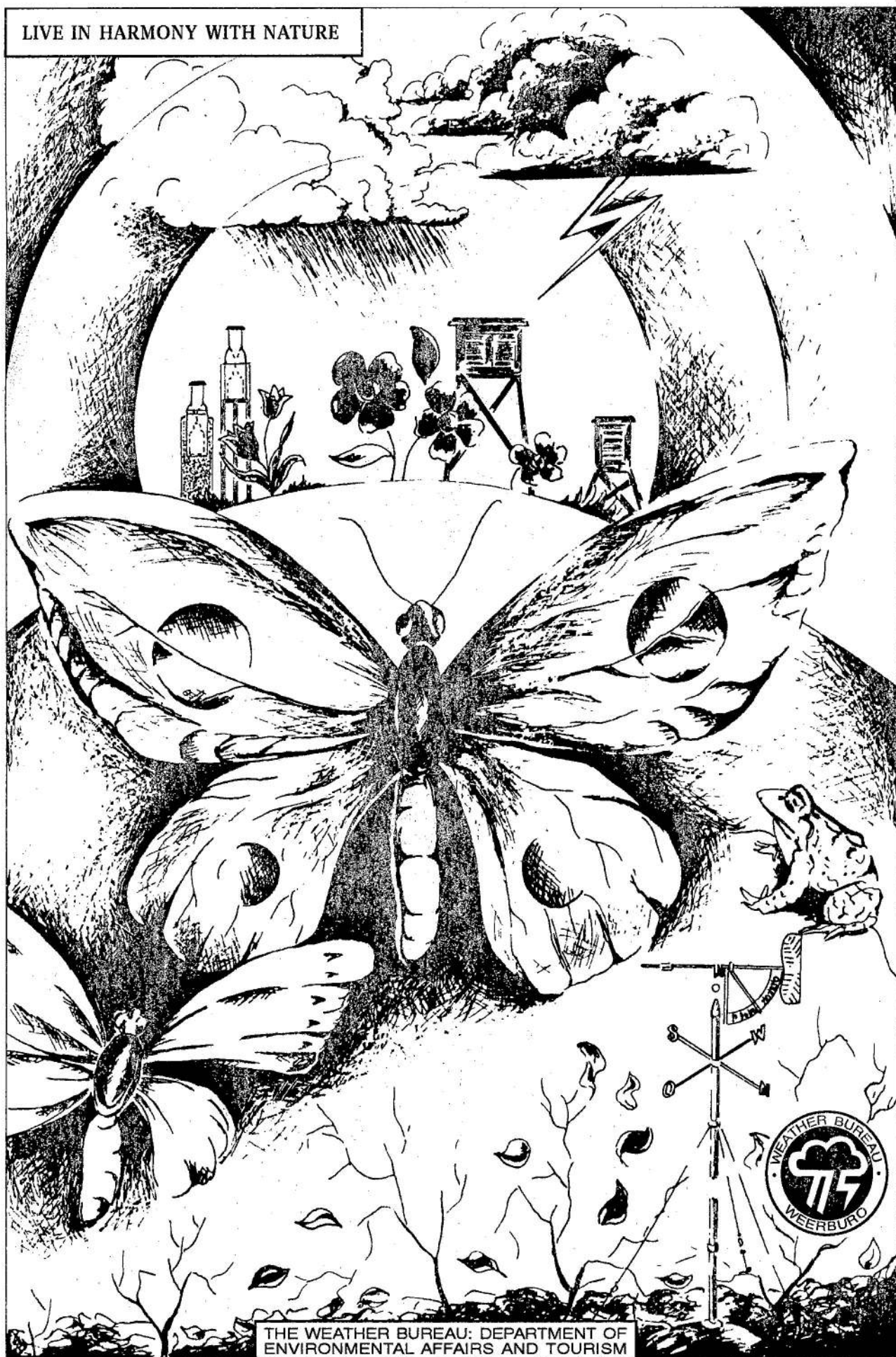
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