

Australian/New Zealand Standard™

Occupational diving operations

Part 3: Recreational industry diving and snorkelling operations



AS/NZS 2299.3:2003

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Australian Industry Group
Australian Marine Sciences Association
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PREFACE

This Standard was prepared by Joint Standards Australia/Standards New Zealand Committee SF-017, Occupational Diving.

This Standard is intended to be Part of a series of Standards for the conduct of occupational diving operations. Diving operations which fall into the scope of this sector-specific Standard may be conducted using either this Standard or AS/NZS 2299.1 which covers diving operations in general.

This Standard is based on the April 1997 version of a draft code of practice for the recreational diving industry prepared over many years by Dive Australia. The Dive Australia draft was developed to take into account the *Code of Practice for Recreational Diving and Recreational Snorkelling at a Workplace* developed by the Queensland Division of Workplace Health and Safety. Later documents, including the 1999 report on the review of workplace health and safety arrangements for recreational diving in Queensland and the Queensland Industry Code of Practice released in November 1999, have also been taken in account in preparing this Standard. The Committee based requirements for enriched air nitrox (EANx), other mixed gases, rebreather and decompression diving on the equivalent text in Queensland Industry Code of Practice for Recreational Technical Diving released in September 2001.

It should be noted that terminology differences exist between this Standard and the Queensland Code of Practice for Recreational Technical Diving. This Standard defines the term 'mixed gas' differently by including EANx in its coverage. It also uses the term 'technical diving' to a lesser extent, using more specific terms in the text to identify which type of diving is being covered in any particular clause or section.

The industry documents have been reworked as a Standard from their previous recommendatory style to contain requirements that have to be met if one wants to be in compliance with the objectives and intent of the Standard. The term 'shall' is used to indicate these requirements. It should be remembered that the requirements in an Australian/New Zealand Standard are not mandatory for legal purposes unless incorporated specifically as such by an Act or regulation.

By contrast, the term 'should' implies a recommendation. Compliance with a Standard can still be achieved without necessarily meeting all of the recommendations. Where recommendations are given, they normally point to generally accepted good practice in the industry concerned and, therefore, should be taken into consideration.

The term 'practicable' has been removed as practicability is usually covered under New Zealand, Commonwealth, State or Territory legislation.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 OBJECTIVE	4
1.3 APPLICATION	4
1.4 REFERENCED DOCUMENTS	5
1.5 DEFINITIONS	6
1.6 DUTIES OF PERSONS	11
SECTION 2 RECREATIONAL DIVING AT A WORKPLACE USING COMPRESSED AIR	
2.1 DIVING PROCEDURES—COMPRESSED AIR	13
2.2 DIVE PERSONNEL	14
2.3 DIVER EQUIPMENT	15
2.4 PLANT	17
2.5 VESSELS, BOATS AND PLATFORMS	18
2.6 TRAINING AND QUALIFICATIONS OF DIVE COORDINATORS OR DIVE SUPERVISORS	18
2.7 FIRST AID	19
2.8 RECORD KEEPING	19
2.9 RISK MANAGEMENT	20
2.10 RECREATIONAL DIVERS IN TRAINING	20
2.11 SUPERVISION OF CERTIFIED DIVERS	21
SECTION 3 RECREATIONAL SNORKELLING AT A WORKPLACE	
3.1 ORGANIZATION	23
3.2 PREPARATION FOR RECREATIONAL SNORKELLING	23
3.3 SUPERVISION OF SNORKELLERS	24
3.4 EQUIPMENT FOR SNORKELLING	24
SECTION 4 RECREATIONAL MIXED GAS DIVING AT A WORKPLACE	
4.1 GENERAL	25
4.2 EAN _x DIVING ON SCUBA	25
4.3 EAN _x DIVING USING REBREATHERS	27
4.4 MIXED GAS OTHER THAN EAN _x ON SCUBA	29
4.5 MIXED GASES OTHER THAN EAN _x ON REBREATHERS	32
SECTION 5 DECOMPRESSION DIVING	
5.1 GENERAL	35
5.2 DIVER SURFACE SUPPORT STATION FOR DECOMPRESSION DIVING	35
5.3 MAXIMUM EXPOSURES TO DECOMPRESSION DIVING	36
5.4 PREREQUISITES FOR DIVERS DOING DECOMPRESSION DIVING TO DEPTHS OF 40 m OR LESS ON AIR	36
5.5 PREREQUISITES FOR DIVERS DOING DECOMPRESSION DIVING TO DEPTHS OVER 40 m ON AIR	36
APPENDICES	
A MEDICAL DECLARATION FOR RESORT COURSE	37
B EXAMPLE OF WRITTEN ADVICE TO RECREATIONAL SNORKELLERS	38
C PREDIVE CHECKS FOR EAN _x REBREATHING DIVERS	39

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Australian/New Zealand Standard
Occupational diving operations

Part 3: Recreational industry diving and snorkelling operations

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements and offers practical guidance for the personnel, equipment and procedures for recreational diving operations using air or mixed gases as the compressed breathing gas supplied through self-contained underwater breathing apparatus (SCUBA), for recreational diving operations using rebreathers and for recreational snorkelling where these activities occur in a workplace.

This Standard does not apply to—

- (a) any recreational diving using compressed air, recreational snorkelling or recreational mixed gas diving performed by persons who are not at a workplace; and
- (b) diving operations (including with surface-supplied breathing apparatus (SSBA)) at a workplace where the diving operations are not for the purpose of the training or supervision of recreational divers and snorkellers, for which other Standards may apply.

1.2 OBJECTIVE

The objective of this Standard is to provide persons engaged in, or connected with, recreational diving and snorkelling at a workplace with a set of requirements and guidance to prevent and control risks arising from these activities.

1.3 APPLICATION**1.3.1 Recreational diving at a workplace using compressed air**

Section 2 of this Standard applies to recreational diving activities at a workplace using compressed air and includes requirements for the following persons:

- (a) The employer of a person employed as, a person employed as, or a person self-employed as—
 - (i) a dive coordinator;
 - (ii) a dive supervisor;
 - (iii) a dive instructor;
 - (iv) rescue personnel; or
 - (v) a lookout.
- (b) A person in control of a workplace (including the master of a vessel) where recreational diving using compressed air takes place.
- (c) A non-employee (including a member of the public) who engages in recreational diving using compressed air at a workplace.

- (d) A person who designs, manufactures, imports or supplies plant for use at a workplace where recreational diving using compressed air occurs.
- (e) A person who manufactures, imports or supplies compressed air for use at such a workplace.

1.3.2 Recreational snorkelling at a workplace

Section 3 of this Standard applies to recreational snorkelling activities at a workplace and includes requirements for the following persons:

- (a) The employer of a person employed as, a person employed as, or a person self-employed as—
 - (i) an activities coordinator;
 - (ii) a guide;
 - (iii) a lookout; or
 - (iv) a rescue diver.
- (b) A person in control of a workplace (including the master of a vessel) where recreational snorkelling takes place.
- (c) A non-employee (including a member of the public) who engages in recreational snorkelling at a workplace.
- (d) A person who designs, manufactures, imports or supplies snorkelling equipment for use at a workplace where recreational snorkelling is undertaken.

1.3.3 Recreational mixed gas diving at a workplace

Section 4 of this Standard applies to recreational diving at a workplace using mixed gases and includes requirements for the following persons:

- (a) An employer of a person employed as, a person employed as, or a person self-employed as—
 - (i) a EANx dive supervisor;
 - (ii) a mixed gas dive supervisor;
 - (iii) a EANx dive instructor;
 - (iv) a mixed gas diving instructor; or
 - (v) any of the persons in Clause 1.3.1 when conducting mixed gas diving.
- (b) A person in control of a workplace (including the master of a vessel) where recreational mixed gas diving takes place.
- (c) A non-employee (including a member of the public) who engages in recreational mixed gas diving at a workplace.
- (d) A person who designs, manufactures, imports or supplies plant for use at a workplace where recreational mixed gas diving occurs.
- (e) A person who manufactures, imports or supplies mixed gas for use at such a workplace.

1.4 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2030 The verification, filling, inspection, testing and maintenance of cylinders for storage and transport of compressed gases

2030.1 Part 1: Cylinders for compressed gases other than acetylene

2337 Gas cylinder test stations

2337.1 Part 1: General requirements, inspections and tests—Gas cylinders

3848 Filling of portable gas cylinders

3848.2 Part 2: Filling of portable cylinders for self-contained underwater breathing apparatus (SCUBA) and non-underwater self-contained breathing apparatus (SCBA)—Safe procedures

4005 Training and certification of recreational divers

4005.1 Part 1: Minimum entry-level SCUBA diving

4005.2 Part 2: Recreational SCUBA dive supervisor

4005.3 Part 3: Assistant SCUBA instructor

4005.4 Part 4: SCUBA instructor

4005.5 Part 5: SCUBA instructor trainer

AS/NZS

2299 Occupational diving operations

2299.1 Part 1: Standard operational practice

IMO (International Maritime Organization)

International Regulations for Preventing Collisions at Sea (1972)

New Zealand Health and Safety Regulations, 1995

NOHSC (National Occupational Health and Safety Commission)

2010 National Code of Practice for Health Care Workers and Other People at Risk of the Transmission of Human Immunodeficiency Virus and Hepatitis B in the Workplace

1.5 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

1.5.1 Alternative ascent system

A highly visible buoyancy device that is, as a minimum, capable of supporting the weight of a submerged diver and an ascent line that the diver may follow to the surface and use to complete any decompression requirements.

1.5.2 Activities coordinator

A person who is appointed by an employer and has responsibility for supervision of persons who are snorkelling.

1.5.3 Ascent path

Any continuous navigational aid indicating the direction to the ascent line and eventually the surface.

1.5.4 Buoyancy compensating device (BCD)

A device worn by a diver which can be inflated or deflated to adjust the diver's buoyancy.

1.5.5 BCD inflation bag

The bag or bladder component of a BCD which holds air allowing buoyancy to be adjusted.

1.5.6 Certified

A certificate or other document of attainment of proficiency has been awarded to the individual in relation to the activity or skill under consideration.

1.5.7 Certified assistant

A person certified by a recreational diving training organization to assist a dive instructor.

1.5.8 Certified diver

A person who has satisfactorily completed an entry-level or higher course of training and has certification recognized by a recreational diving training organization.

1.5.9 Certified EANx SCUBA diver

A person who holds a certificate in recreational SCUBA diving using EANx issued by a recreational diving training organization.

1.5.10 Certified mixed gas SCUBA diver

A person who holds a certificate in recreational SCUBA diving using mixed gases from a recreational diving training organization.

1.5.11 Close personal supervision

The person supervising is able to readily make physical contact with and render assistance and guidance to any persons being supervised.

1.5.12 Communications device

A device that enables a person to make contact with emergency services and summon assistance and receive instructions without leaving the immediate area.

1.5.13 Competent person

A person who, because of training, qualifications or experience, or a combination of these, has the skills necessary to perform the specified duties.

1.5.14 Compressed air

Atmospheric air compressed to a pressure higher than one atmosphere absolute.

1.5.15 Confined water

Any body of water offering swimming-pool-like conditions with respect to clarity, calmness, current, depth and adequate access to water shallow enough to stand up in.

1.5.16 Decompression stop

The specific length of time that a diver needs to hold his or her ascent at a specified depth to allow for the elimination of sufficient inert gas from the body to allow a safe ascent to the next decompression stop or the surface.

1.5.17 Direct supervision

For training situations, the in-water visual observation by a SCUBA instructor in a position to readily render assistance and guidance.

1.5.18 Dive coordinator

The person who is responsible for the overall coordination of two or more dive supervisors at a dive site and who is a qualified dive supervisor.

1.5.19 Dive flag

A flag in accordance with International Maritime Organization (IMO) flag ALPHA.

1.5.20 Dive instructor

A person who holds a SCUBA instructor's certificate issued by a recreational diving training organization.

1.5.21 Dive plan

The procedures by which the employer's diving operations manual is implemented for the particular diving operation.

1.5.22 Dive safety log

A record containing information such as a list of divers, time in, time out, bottom time and maximum depth, repetitive dive remarks, illness/injury/occurrence records.

1.5.23 Dive site

The location where recreational diving is performed.

1.5.24 Dive supervisor

The person appointed by the employer to supervise recreational diving operations and who holds a certificate in diving operations leadership issued by a recreational diving training organization.

1.5.25 Dive team

Those divers in the water with the same dive plan.

1.5.26 Diving computer

An electronic device which displays information calculated from decompression algorithms.

1.5.27 Diving first aid

First aid training in addition to basic life support, emergency oxygen administration to injured SCUBA divers, SCUBA accident management and field clinical assessment.

NOTE: In New Zealand and some Australian states, the first aid course needs to be approved by the relevant regulatory authorities.

1.5.28 Diving medical practitioner

A medical practitioner who has been appropriately trained in underwater medicine.

1.5.29 Diving operations

Any activity in which a person using underwater diving equipment and breathing compressed gas is subject to pressure greater than one atmosphere absolute.

1.5.30 Enriched air nitrox (EANx)

A mixture of oxygen and nitrogen where the volume of oxygen in the mixture is over 22% (also called oxygen enriched air).

1.5.31 EANx dive supervisor

A dive supervisor engaged by an employer to supervise recreational SCUBA diving operations using EANx and who holds a certificate in EANx diving operations issued by a recreational diving training organization.

1.5.32 EANx diving instructor

A person who holds a current EANx instructor's certificate issued by a recreational diving training organization.

1.5.33 Employee

A person who performs work for an employer.

1.5.34 Employer

A person who, in the course of the person's business, engages the services of another person in the performance of work or a self-employed person.

1.5.35 Entry level course

A course of SCUBA diving which provides the minimum training for persons who wish to engage in open water SCUBA diving with a diver of similar qualifications without supervision and for which a certificate is issued by a recreational diving training organization.

1.5.36 Fill station

The area in which cylinders are refilled. The boundaries of which are determined by the length of the filling whips or hoses.

1.5.37 Guide

A person who has responsibility for direct in-water contact with, or supervision of, recreational snorkellers.

1.5.38 Hazard

Anything that gives rise to a risk.

1.5.39 Lookout

A person who watches persons undertaking recreational diving or recreational snorkelling and is capable of initiating rescue procedures.

1.5.40 Master of a vessel

A person in control of a vessel.

1.5.41 Mixed gas

An underwater breathing mixture other than compressed air.

1.5.42 Mixed gas dive supervisor

A dive supervisor engaged by an employer to supervise recreational SCUBA diving operations using mixed gases and who holds a certificate in mixed gas diving operations issued by a recreational diving training organization.

1.5.43 Mixed gas diving instructor

A self-employed person or a person engaged by an employer to teach recreational SCUBA diving using mixed gases and who holds a mixed gas SCUBA instructor's certificate issued by a recreational diving training organization.

1.5.44 Open water

Any body of water which is subject to wind, swell, current or waves and which can be used for diving.

1.5.45 Personal protective equipment

Clothing, equipment and substance that is designed to be worn by a person—

- (a) to protect the person from risks of injury or disease; or
- (b) to provide an appropriate level of warmth for the diver.

1.5.46 Plant

Any of the following:

- (a) Machinery, equipment, appliance, pressure vessel, implement and tool.

- (b) Personal protective equipment.
- (c) Plant specified in New Zealand or Australian Commonwealth, State or Territory workplace health and safety acts.
- (d) A component of plant or a fitting, connection, accessory or adjunct to, plant.

1.5.47 Rebreather

Semi-closed or closed circuit SCUBA equipment.

1.5.48 Recompression chamber

A surface chamber in which persons can be subjected to pressures required for the treatment of decompression illness.

1.5.49 Record

A collection of information in a permanent form. It may take many forms, for example, a written report or computerized database.

1.5.50 Recreational diving certificate

A certificate in recreational diving issued by a SCUBA training organization.

1.5.51 Recreational diving at a workplace

Diving at a place of work with underwater diving equipment with compressed gas by a person who—

- (a) is enrolled in a recreational diving certificate or a resort course;
- (b) holds a recreational entry-level diving certificate or higher level qualification and is not remunerated for that person's diving activity at a workplace;
- (c) is employed as a dive coordinator, dive supervisor, dive instructor, mixed gas dive supervisor, mixed gas dive instructor or lookout with respect to the training of persons enrolled in a recreational diving certificate or resort course or supervision of persons who hold a recreational diving certificate or other diving qualification; or
- (d) is an underwater videographer, film maker or photographer whose only task is to film recreational diving.

NOTE: Pre-entry level diving in a swimming pool undertaken under the guidelines of a recreational diving training organization is excluded.

1.5.52 Recreational snorkelling at a workplace

Snorkelling where an employer or self-employed person is conducting recreational snorkelling as part of his or her undertaking.

1.5.53 Recreational diving training organization

An organization engaged in the certification of recreational divers through documented training procedures, for SCUBA in accordance with the AS 4005 series or an internationally-recognized training series and for divers using mixed gases or conducting decompression diving, to requirements equal to or greater than the training requirements set out in this Standard.

1.5.54 Redundant gas system

An additional gas storage and delivery system that contains sufficient gas to allow the diver to return from the furthest point of the dive achievable on the current gas and ascend to a point where another gas supply is available. It should take into consideration the possibility of ascent line loss.

1.5.55 Redundant mask

An additional mask.

1.5.56 Rescue personnel

A person or personnel responsible for the rescue of a SCUBA diver or snorkeller in difficulty, holding, individually or between them, training to conduct such rescues and competencies in diving first aid, cardiopulmonary resuscitation (CPR) and oxygen administration.

1.5.57 Resort course

An introductory SCUBA experience or educational program that does not result in the issue of a recreational entry-level certificate but is conducted according to a recreational diving training organization program.

1.5.58 Risk

Anything that has the potential to result in harm to a person.

1.5.59 Safety stop

A delay in ascent similar to a decompression stop but used when a decompression stop is not required.

1.5.60 Self-employed person

A person who works for gain or reward other than under a contract of employment or apprenticeship, whether or not the person employs one or more other persons.

1.5.61 Trimix

An underwater breathing mixture of oxygen and two inert gases.

1.5.62 Workplace

Any place where work is or is to be performed by either employers, self-employed persons or employees.

1.6 DUTIES OF PERSONS

At present the following persons have been assigned a duty of care in the general occupational health and safety legislation in New Zealand and Australia. While compliance with relevant occupational health and safety legislation is mandatory and any interpretations it contains are applicable, the following general interpretations of the assigned duties for persons involved in recreational diving at a workplace may provide an understanding of the basis for the requirements in this Standard:

- (a) *Employer*—to ensure the health and safety of that person's employees, e.g. for dive coordinators, dive supervisors and dive instructors, activity coordinators and lookouts.
- (b) *Employer and self-employed person*—to ensure that the conduct of that person's undertaking (recreational diving, recreational snorkelling or recreational mixed gas diving) minimizes risks to public health and safety (to divers or snorkellers).
- (c) *Person in control of plant or a substance who provides that plant or substance for use at a workplace for workers other than that person's employees*—to ensure that the plant or substance has minimal risks to health and safety, e.g. a master of a vessel used for diving who provides SCUBA cylinders for use by divers.
- (d) *Persons who design, manufacture, import or supply plant or substances for use at a workplace*—to ensure that the plant has minimal risks to health and safety when used properly.

- (e) *Employee e.g. dive coordinator, dive supervisor, dive instructor, activities coordinator, and lookout*—to ensure that person follows safety instructions given by the employer and uses personal protective equipment where provided by the employer and which that person has been trained to use.
- (f) *Person other than employer or employee at a workplace, i.e. recreational divers, recreational snorkellers and recreational mixed gas divers*—to ensure that person does not act in a manner which endangers the health and safety of themselves or any other person at the workplace, follows safety directions given by the employer for that workplace and does not interfere with anything provided in the interests of health or safety at the workplace.
- (g) *Owner of specified plant, e.g. gas cylinders*—to ensure that the plant is properly maintained.