

Australian/New Zealand Standard™

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**Occupational diving operations**

**Part 1: Standard operational  
practice**

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## AS/NZS 2299.1:1999

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF/17, Occupational Diving. It was approved on behalf of the Council of Standards Australia on 16 November 1998 and on behalf of the Council of Standards New Zealand on 9 November 1998. It was published on 5 March 1999.

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The following interests are represented on Committee SF/17:

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Australian Council of Trade Unions  
Australian Dive Council  
Australian Diving Contractors Association  
Australian Industry Group  
Australian Marine Sciences Association  
Australian Medical Association  
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## Occupational diving operations

### Part 1: Standard operational practice

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF/17, Occupational Diving, to supersede AS 2299—1992, *Occupational diving*.

This Standard is intended to be the initial Part of a series of Standards for the conduct of occupational diving operations. It is intended for application to all diving operations until such time as Standards for the conduct of diving operations in specific sectors of the diving industry are published. At that time, diving operations which fall into the scope of a sector-specific Standard may be conducted using either this Standard or the sector-specific Standard. At the time of publication, sector-specific Standards for scientific, recreational and film and photographic diving operations were in the course of preparation.

The objective of this revision is to clarify and update the Standard and to reflect the requirements of the regulatory authorities. Significant differences from the 1992 edition include the following:

- (a) Addition of hazard identification, risk assessment and risk control measures in accordance with current occupational health and safety legislation.
- (b) Advice on the application of the Standard for breathing gases other than air, diving in liquids other than water and hookah or rebreather gas supply systems.
- (c) An expanded table dealing with exposure to altitude after diving.
- (d) Revision of the time listed for Level 1 limits for compression chamber availability to make them more consistent in terms of risk level, based on the latest DCI risk data available from the US Naval Medical Research Institute.
- (e) Reformatting of Section 4 (Compression (Recompression) Chambers) and the dropping of the requirement for worksite chambers to have transfer-under-pressure capability.
- (f) New clauses dealing with decompression diving, and an expanded appendix containing the decompression tables developed by the Canadian Defence and Civil Institute of Experimental Medicine (DCIEM) in both metric and imperial forms, with associated procedures and examples.
- (g) A new Section 8 dealing with medical requirements, and reformatted diving medical forms in Appendix L.
- (h) A new appendix containing a list of regulatory authorities in Australia and New Zealand.
- (i) Modifications to various clauses were made to address points raised in investigations of several fatal and non-fatal carbon monoxide exposures.

The procedures, tables, figures and worksheets from the DCIEM Diving Manual which have been used in Appendix F are reproduced with the permission of the Defence and Civil Institute of Environmental Medicine (DCIEM). The copyright for this material remains with Her Majesty the Queen in Right of Canada. The Department of National Defence (Canada), the Defence and Civil Institute of Environmental Medicine (DCIEM) and Standards Australia disclaim any and all responsibilities for the use of these tables and procedures.

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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.

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# STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

## Australian/New Zealand Standard

### Occupational diving operations

#### Part 1: Standard operational practice

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE** This Standard specifies requirements for the personnel, equipment and procedures used in occupational underwater operations in up to 50 m (165 ft) depth of water, where compressed breathing gas is supplied either through surface-supplied breathing apparatus (SSBA) or self-contained underwater breathing apparatus (SCUBA).

**1.2 OBJECTIVE** The objective of this Standard is to provide persons engaged in, or connected with, occupational diving with a set of requirements to promote uniformity of practice in relation to the occupational health and safety of the diver.

**1.3 APPLICATION** This Standard applies to persons directly involved in occupational diving operations and industries either employing those persons or supplying equipment for use in connection with occupational diving operations. This Standard has been developed for diving activity using air or oxygen-nitrogen mixtures where the oxygen concentration is in the range of 20% to 22%. Although this Standard may be used for guidance for diving activities using oxygen-nitrogen mixtures with higher or lower concentrations, additional training and procedures will be necessary. Similarly, this Standard may be used for guidance for diving activities in liquids other than water and for breathing apparatus such as hookah or rebreather units with the appropriate additional training and procedures. The Standard does not apply to the following:

- (a) Recreational diving.
- (b) Diving beyond 50 m.
- (c) Diving covered by Commonwealth or State Petroleum (Submerged Lands) Acts.

#### NOTES:

- 1 Specialized gas mixing, filling, analysis, labelling and diving procedures are necessary for safe diving using breathing gases other than air. In particular, special equipment selection and cleaning procedures are needed for diving using oxygen enriched gas mixtures. This Standard does not provide adequate guidance on these procedures.
- 2 For the types of diving in Items (a), (b) and (c) above, the relevant regulatory authority should be consulted. A list of some of those authorities is given in Appendix A.
- 3 It is not necessary that a person comes into direct body contact with the water or other liquid as there are many situations where individuals are subject to pressure equivalent to the water pressure experienced at a particular depth. Such situations occurring in connection with diving operations are covered by this Standard. Work in pressurized atmospheres in tunnels or caissons or in hyperbaric treatment facilities in hospitals are not covered by this Standard.



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