

LOAN COPY
INFORMATION CENTRE
STANDARDS AUSTRALIA

Replacement copy
SUPERSEDED BY

AS 2815.2 1992

AS 2815.2—1985
UDC 626.024.004.24

Australian Standard® 2815.2—1985

**TRAINING AND CERTIFICATION OF
DIVERS**

**Part 2—RESTRICTED
COMMERCIAL AIR DIVING**



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

This Australian standard was prepared by Committee SF/17, Work in Compressed Air. It was approved on behalf of the Council of the Standards Association of Australia on 19 July 1985, and published on 9 August 1985.

The following interests are represented on Committee SF/17:

Association of Offshore Diving Contractors of Australia
Australian Medical Association
Australian Mines and Metals Association (Incorporated)
Australian Pipeline Industry Association
Department of Defence
Department of Employment and Industrial Affairs, Qld
Department of Health
Department of Health, N.S.W
Department of Health, Qld
Department of Industrial Relations, N.S.W
Department of Labour, S.A.
Department of Minerals and Energy, Vic.
Department of Resources and Energy
Federation of Australian Underwater Instructors
Health Commission of Victoria
Manufacturing Interests
Maritime Services Board of New South Wales
Melbourne and Metropolitan Board of Works
Metal Trades Industry Association of Australia
Ministry of Employment and Training, Vic.
National Safety Council of Australia (Victorian Division)
Police Department, N.S.W.
Port of Melbourne Authority
Professional Divers Association of Australasia
South Australian Health Commission

Review of Australian Standards. To keep abreast of progress in industry, Australian standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publications will be found in the Catalogue of SAA Publications; this information is supplemented each month by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn standards.

Suggestions for improvements to Australian standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This standard was issued in draft form for comment as DR 84032.

AUSTRALIAN STANDARD

**TRAINING AND CERTIFICATION OF
DIVERS
Part 2
RESTRICTED COMMERCIAL
AIR DIVING**

AS 2815.2—1985

First published1985

**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.**

ISBN 0 7262 3871 6

PREFACE

This standard was prepared by the Association's Committee on Work in Compressed Air under the supervision of the Safety Standards Board.

This standard forms one part (Part 2) of a series of standards relevant to the training and certification of underwater divers, where the requirements of regulatory authorities and industry demand a prescribed degree of training and competence to ensure an adequate degree of safety, performance and economy.

This standard is particularly related to the training of personnel who will be engaged in commercial underwater operations as described in AS 2299, Underwater Air Breathing Operations, using surface-supplied compressed air or self-contained breathing apparatus and not having access to a surface compression chamber. Such qualification is the minimum required by regulatory authorities who are responsible for the control of on-shore diving, e.g. construction of jetties and dams.

Other standards in the series relate to Bell Diving (Part 4), Commercial Air Diving with Surface Compression Facilities (Part 3), and Non-recreational SCUBA Diving (Part 1). Other parts may also be prepared for training of other persons/operators involved in diving operations, e.g. diving supervisors.

This standard is largely based on requirements originally developed by the (U.K.) Manpower Services Commission (MSC) and the European Diving Technology Committee of the EEC, which were developed to comply with the (U.K.) Health and Safety Diving Operations at Work Regulations. Such regulations require all divers entering construction or off-shore oil and gas industries in the United Kingdom to have achieved the appropriate requirements of the appropriate MSC underwater working standard and to be certified as thus by the relevant Regulatory Authority.

Australian industry and the committee have strongly supported the objectives of developing training standards compatible with the U.K. standards and to provide for reciprocal acceptance of diver qualification/certification within Australia *and with* the U.K. and European authorities. Such reciprocity is most desirable to provide uniform control and regulations for the itinerant workforce of professional divers. To this end, close contact has been maintained with the U.K. authorities and arrangements for reciprocal approval of diver training schools (curriculum and facilities) have been negotiated by the Victorian Department of Minerals and Energy.

In the U.K., the relevant Authority (Health and Safety Commission) has also established a Certification Board for Diving Training to advise on contingencies not covered by standards, as follows:

- (a) Criteria by which diver training may be assessed for certification purposes.
- (b) Criteria by which experience may be assessed for certification purposes of a standard not less than the standard of training in (a) above.
- (c) Establishments providing training satisfying the criteria in (a) above.
- (d) Equivalence to (a) and (b) above in respect of training and experience in foreign countries.
- (e) Arrangements for—
 - (i) issuing of certificates in respect of diver training;
 - (ii) declaring such certificates to be no longer valid; and
 - (iii) approval of persons taking part in diving operations as part of training.

Advice on how the above matters are to be handled in Australia should be sought from the relevant State Regulatory Authority (see Appendix E and Appendix F).

©Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1985

Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 Scope	4
1.2 Purpose and Terminal Objectives	4
1.3 Application	4
1.4 Referenced Documents	5
1.5 Selection Criteria	5
SECTION 2. TABLES OF TERMINAL OBJECTIVES AND TRAINING TOPICS	
Table 2.1 Diving Theory	6
Table 2.2 Use of Self-contained and Surface-supplied Underwater Breathing Apparatus (Including Rigid Helmet with Free-flow Primary Air Supply)	7
Table 2.3 Seamanship	8
Table 2.4 Diver Communication Systems	8
Table 2.5 Underwater Tasks	9
Table 2.6 Underwater Hazards	11
Table 2.7 Air Compressors	12
Table 2.8 Decompression Tables and Therapeutic Recompression	12
Table 2.9 Physiology of Diving and First Aid	13
Table 2.10 Relevant Legislation and Guidance	14
SECTION 3. TRAINING PLANS, ASSESSMENT AND PLANNED EXPERIENCE	
3.1 Developing the Training Plan	15
3.2 Methods of Trainee Assessment	15
3.3 Staffing, Equipment and Facilities	15
3.4 Planned Experience	15
APPENDICES	
A Example of Training Syllabus for Restricted Air Diving with No Surface Compression Chamber on Site (Operated by the Underwater Training Centre)	17
B Methods of Assessment	20
C Example of Training Objective Standard to be Achieved	21
D Example of Trainee Record Form (Used by the Underwater Training Centre)	22
E Legislation Covering Diving Operations in Australia in Connection with Off-shore Petroleum Exploration and Development	23
F Legislation Covering Diving Operations in Australia Other than in Connection with Off-shore Petroleum Exploration and Development	24

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

TRAINING AND CERTIFICATION OF DIVERS

PART 2—RESTRICTED COMMERCIAL AIR DIVING

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies the training activities and terminal objectives required for the training and accreditation of divers who are required to work safely and competently—

- (a) using self-contained underwater breathing apparatus (SCUBA) or surface-supplied underwater breathing apparatus, to depths of 20 m (see NOTES); and
- (b) on sites where no surface compression chambers are required by AS 2299 to be present on site or within convenient distance.

NOTES:

1. Training and certification to this standard is generally the minimum required to undertake diving in on-shore locations to undertake construction activities, e.g. repair of jetties, dams.
2. Attention is drawn to the requirements of AS 2299 and of regulatory authorities which limit the depths and times of diving with no compression chamber facilities.
3. Persons who wish to be trained sufficiently to dive to greater depths need to be trained to AS 2815.3. Graduates from training courses to this standard, i.e. AS 2815.2, who wish to upgrade their diving qualifications may be eligible to do so by completing approved selected modules at an approved diving school.

1.2 PURPOSE AND TERMINAL OBJECTIVES.

1.2.1 Purpose. The purpose of this standard is to describe the organizational and syllabus requirements for the following;

- (a) To train underwater workers for the diving industry to operate safely and competently to depths of 20 m using self-contained and surface-supplied breathing apparatus in accordance with AS 2299.
- (b) To provide a knowledge of the underwater skills required by the industry and the application of basic skills in order to complete a range of underwater tasks safely and efficiently.

The following important aspects need to be stressed.

- (i) *Safety and health.* The safety and health of the diver and the developments of safe working practices must be integrated into all aspects of the training course.
- (ii) *Team training.* The training, particularly in practical diving and underwater working, needs to be directed not only towards developing individual competence, but also to develop the trainee to think and act as a member of a team.

1.2.2 Terminal objectives. The terminal objectives describe what the trainee must be able to do on completion of training and can be classified broadly into two groups as follows:

- (a) Objectives whose purpose is to develop some degree of competence in the trainee.
- (b) Objectives which are limited to developing in the trainee an appreciation of, or acquaintance with, a piece of equipment or a procedure.

NOTES:

1. The wording and interpretation of the terminal objectives are very important as they are used to produce the topics to be included in the training program.
2. An example of criteria that may be developed by the training school to assess the level of competence achieved by a trainee is given in Appendix C.
3. Details of the curriculum and criteria for assessment are subject to approval by the relevant Regulatory Authority.

The terminal objectives have been grouped under ten headings (Tables) in this standard as follows:

Table 2.1 Diving theory.

Table 2.2 Use of self-contained underwater breathing apparatus and surface-supplied diving equipment (including rigid helmet with free-flow primary air supply)

Table 2.3 Seamanship

Table 2.4 Diver communication systems

Table 2.5 Underwater tasks

Table 2.6 Underwater hazards

Table 2.7 Air compressors

Table 2.8 Decompression tables and therapeutic recompression

Table 2.9 Physiology of diving and first aid

Table 2.10 Relevant legislation and guidance.

NOTE: Table 2.5 includes a basic introduction to the use of explosives underwater. However, the training of underwater explosives workers requires separate specialised courses which are subject to special approval by regulatory authorities.

1.3 APPLICATION. The standard recognizes that training may take place in a diving school or in-company.

Regulatory authorities may utilize the standard to—

- (a) approve establishments to run courses to this standard;
- (b) monitor courses to ensure standards are being maintained; and
- (c) issue or accept certificates of competence to or from persons who have completed the training tasks specified herein and are adjudged competent to achieve the terminal objectives described herein.

NOTE: At the time of publication of this standard—

- (i) Investigations are under way to determine if reciprocal recognition of diver qualification and certification can be