

Australian Standard™

Work in compressed air and hyperbaric facilities

Part 1: Work in tunnels, shafts and caissons

This Australian Standard was prepared by Committee SF-046, Non-diving Work in Compressed Air and Hyperbaric Treatment Facilities. It was approved on behalf of the Council of Standards Australia on 2 January 2003 and published on 16 January 2003.

The following are represented on Committee SF-046:

Australian and New Zealand Hyperbaric Medicine Group
Australian and New Zealand College of Anaesthetists
Australian Industry Group
Australian Medical Association
Hyperbaric Engineering Industry Forum
Hyperbaric Technicians and Nurses Association
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PREFACE

This Standard was prepared by Standards Australia Committee SF-046, Non-diving Work in Compressed Air and Hyperbaric Treatment Facilities, to supersede AS CA12—1970, *Work in compressed air (known as the SAA Compressed Air Code)*.

Technological advances and a greatly increased availability of data concerning the effects of working in compressed air have identified a need to expand and split this Standard into two parts with Part 1 (this part) essentially a revision of AS CA12—1970 covering work in tunnels, shafts and caissons, and Part 2 specifying requirements for work in hyperbaric oxygen facilities.

The revision includes the insertion of metric values with both figures for bar gauge (as used in the industry) and the SI unit of kilopascals shown to reduce the risk of errors in conversions between the two. The Standard has been modified extensively during this revision and attention is drawn to the following changes:

- (a) The Standard has been modified to address tunnel boring machines.
- (b) Staged decompression using oxygen breathing has been specified.
- (c) A requirement has been added for a hazard identification, risk assessment and control process to be conducted prior to work in compressed air being undertaken.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendices. 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	5
1.2 OBJECTIVE	5
1.3 APPLICATION.....	5
1.4 REFERENCED DOCUMENTS	5
1.5 DEFINITIONS.....	5
SECTION 2 PERSONNEL AND DUTIES	
2.1 DUTY OF CONSTRUCTOR.....	8
2.2 LOCK OPERATOR.....	8
2.3 TREATMENT CHAMBER OPERATOR.....	9
2.4 FIRST-AID PERSONNEL.....	9
2.5 MEDICAL OFFICER	9
2.6 COMPRESSOR MONITORING	10
SECTION 3 HAZARD IDENTIFICATION, RISK ASSESSMENT AND CONTROL	
3.1 CONSULTATION	11
3.2 HAZARD IDENTIFICATION, RISK ASSESSMENT AND CONTROL PROCESS	11
3.3 HAZARD IDENTIFICATION.....	11
3.4 RISK ASSESSMENT	12
3.5 RISK CONTROL.....	12
SECTION 4 PLANNING AND PROCEDURES	
4.1 PLANNING	14
4.2 PROCEDURES.....	14
4.3 TRAINING	14
4.4 COMMUNICATIONS.....	15
4.5 IDENTIFICATION BADGE.....	15
4.6 NOTICES AND INSTRUCTIONS	15
4.7 PROHIBITION OF SMOKING, ALCOHOL AND DRUGS	16
4.8 MAXIMUM PERIODS IN COMPRESSED AIR.....	16
4.9 COMPRESSOR.....	16
4.10 DECOMPRESSION.....	17
4.11 VENTILATION OF THE WORKING CHAMBER.....	17
4.12 CHANGE IN WORKING PRESSURE.....	19
4.13 DECONTAMINATING	20
4.14 SAFETY RESCUE SYSTEM	20
4.15 CONTROL OF OXYGEN	20
SECTION 5 MEDICAL REQUIREMENTS	
5.1 MEDICAL CERTIFICATION	21
5.2 MEDICAL PRACTITIONER	21
5.3 SUPERVISION OF HEALTH	21

SECTION 6 PLANT

6.1	GENERAL	22
6.2	PERSONNEL LOCK	22
6.3	TREATMENT CHAMBER	25
6.4	SPECIAL PROVISIONS FOR WORKING CHAMBERS	26
6.5	SPECIAL PROVISIONS FOR COMPRESSED AIR CAISSONS AND SHAFTS	27
6.6	COMPRESSED AIR SUPPLY	28
6.7	COMPRESSED AIR PLANT	28
6.8	ELECTRICAL INSTALLATION	29
6.9	FIRE CONTROL EQUIPMENT	29
6.10	PERSONNEL FACILITIES	30

SECTION 7 SPECIAL PRECAUTIONS—USE OF EXPLOSIVES

7.1	COMPLIANCE WITH CODE	31
7.2	LOADING	31
7.3	DETONATION—BEFORE AND AFTER	31

SECTION 8 RECORDS

8.1	MEDICAL OFFICER'S REPORT	32
8.2	RECORDS	32

SECTION 9 EMPLOYEE RESPONSIBILITIES

9.1	RESPONSIBILITIES	33
9.2	COMPRESSED AIR WORKERS LOGBOOK	33

APPENDICES

A	LIST OF REFERENCED AND RELATED DOCUMENTS	34
B	GUIDANCE FOR MEDICAL PROFESSIONERS	36
C	INFORMATION AND INSTRUCTIONS TO ALL PERSONS WORKING IN COMPRESSED AIR	42
D	RECOMPRESSION PROTOCOL	45
E	MEDICAL EXAMINATION FORMS	47
F	LONG BONE SURVEY FOR DYSBARIC OSTEONECROSIS	53

STANDARDS AUSTRALIA

Australian Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for medical supervision, operating procedures, equipment (minimum requirements, design and operation) and general precautions to be observed for work in tunnels, shafts and caissons where compressed air is the breathing medium and the maximum pressure of the work area is 4 bar (400 kPa) gauge.

Appendices include medical standards and examination reports, instructions for persons working in compressed air and information on decompression illness for compressed air workers.

1.2 OBJECTIVE

The objective of this Standard is to provide a set of requirements to ensure safe working conditions for people entering and working under increased ambient pressure (excluding diving operations and hyperbaric treatment operations (see AS 4774.2)) and to promote uniformity of practice in relation to the health and safety of persons working in or entering shafts, tunnels, tunnelling machines and compressed air caissons pressurized above atmospheric pressure.

1.3 APPLICATION

This Standard applies to operations in tunnels, shafts and caissons pressurized to a maximum of 4 bar (400 kPa) gauge using compressed air as the breathing medium.

This Standard may also be used for guidance for operations in other environments and areas pressurized to greater than 4 bar (400 kPa) gauge. However, additional training and procedures will be necessary and the use of compressed air as the breathing medium should be reconsidered.

1.4 REFERENCED DOCUMENTS

A list of referenced and other related publications is provided in Appendix A.

1.5 DEFINITIONS

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

1.5.1 Built in breathing system (BIBS)

A system providing a close fitting face mask for each person in a personnel lock, from which the occupants breathe oxygen to speed their safe decompression. The system exhausts the exhaled breath of the mask wearer outside the lock chamber.