

Australian/New Zealand Standard™

Laboratory design and construction



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AS/NZS 2982:2010

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The following are represented on Committee BD-046:

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Australian Chamber of Commerce and Industry
Australian Institute of Architects
Commonwealth Department of Health and Ageing
Commonwealth Scientific and Industrial Research Organization
Engineers Australia
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PREFACE

This Standard was prepared by the members of the Joint Standards Australia/Standards New Zealand Committee BD-046, Laboratory Design and Construction, to supersede AS/NZS 2982.1:1997, *Laboratory design and construction, Part 1: General requirements*. This Standard specifies requirements for the design and construction of laboratories based mainly on maximizing the safety of such facilities. Note that this is a single part Standard. The 'Part 1' title reference, included in the superseded standard, has now been dropped.

This Standard supplements the AS/NZS 2243 series, which refers mainly to safe working practices in laboratories. However, the AS/NZS 2243 series also includes some design and construction requirements particularly for specialized components (e.g. fume cupboards) and applications (e.g. physical containment). Reference to both AS/NZS 2982 and the AS/NZS 2243 series is recommended where laboratories are being assessed or planned.

This Standard is designed to help organizations responsible for commissioning and operating laboratories to provide a safe workplace. A laboratory must be designed, constructed, maintained and operated to minimize hazards and reduce risks to personal or public safety to an acceptable level.

While conformity to this Standard will enhance the safety of the workplace, disregard for safe working practices may negate the provisions for safety that are built into a laboratory. It is therefore essential that all personnel, including non-technical staff and visitors, be aware of and follow safe working procedures.

The Committee does not suggest that any of the provisions of this Standard are retrospective. However, users are encouraged to critically reassess their laboratories and adopt and implement those parts of this Standard that are cost effective and practicable and that can improve overall site safety.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance. Notes are also informative and for information and guidance.

CONTENTS

	<i>Page</i>
FOREWORD.....	5
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	6
1.2 DESIGN	6
1.3 REFERENCED DOCUMENTS	6
1.4 DEFINITIONS	8
SECTION 2 GENERAL LABORATORY CONSTRUCTION REQUIREMENTS	
2.1 SCOPE OF SECTION	15
2.2 PROTECTION AGAINST SUNLIGHT	15
2.3 STRUCTURAL INTEGRITY	15
2.4 CONSTRUCTION MATERIALS AND FINISHES	15
2.5 FLOORS.....	15
2.6 WALLS	16
2.7 CEILINGS.....	16
2.8 VENTILATION OPENINGS	16
2.9 BENCHES.....	16
2.10 AISLES	17
2.11 EGRESS AND ACCESS	18
2.12 SHELVING	18
2.13 FIXTURES, FITTINGS AND EQUIPMENT	18
2.14 FUME CUPBOARDS AND CABINETS	20
2.15 LUNCH ROOMS AND TOILETS	20
2.16 WRITE UP AREAS.....	20
2.17 RESTRICTED ACCESS	20
2.18 WATER HEATERS	20
SECTION 3 RETICULATED SERVICES	
3.1 SCOPE OF SECTION	21
3.2 IDENTIFICATION AND COLOUR CODING	21
3.3 SERVICE ISOLATION.....	21
3.4 EMERGENCY SHUT OFF	21
3.5 EXPOSED SERVICE PIPES.....	21
3.6 PIPING IN CONCEALED SPACES	21
3.7 RETICULATION FROM GAS CYLINDERS.....	21
3.8 VACUUM RETICULATION	22
3.9 HYDRAULIC SERVICES	22
SECTION 4 ELECTRICAL SERVICES	
4.1 STANDARDS AND REGULATIONS.....	24
4.2 LABORATORY POWER	24
4.3 LABORATORY LIGHTING.....	24
SECTION 5 VENTILATION AND AIR QUALITY	
5.1 GENERAL	25
5.2 VENTILATION FOR OCCUPANTS	25
5.3 NATURAL VENTILATION.....	25
5.4 MECHANICAL VENTILATION.....	25

	<i>Page</i>
5.5 AIRBORNE CONTAMINANTS	26
5.6 LOCAL EXHAUST VENTILATION	26
5.7 VENTILATION FOR HAZARDOUS CHEMICAL STORES	27
SECTION 6 HEALTH AND SAFETY REQUIREMENTS	
6.1 GENERAL	29
6.2 SAFETY SHOWERS AND EYEWASHERS	29
6.3 HANDWASHING FACILITIES	29
6.4 SAFETY NOTICEBOARDS	30
6.5 SAFETY SIGNS.....	30
6.6 HAZARD SIGNS AND PLACARDS.....	30
6.7 ADDITIONAL REQUIREMENTS	30
SECTION 7 STORAGE OF HAZARDOUS SUBSTANCES	
7.1 GENERAL	31
7.2 FLAMMABLE LIQUIDS CABINETS.....	31
7.3 FLAMMABLE LIQUIDS STORES	31
7.4 COMPRESSED-GAS CYLINDERS	32
7.5 STORAGE AREAS FOR CORROSIVE MATERIAL	32
7.6 CHEMICAL STORAGE CABINETS	32
7.7 STORAGE FOR SOLID AND LIQUID WASTES	32
SECTION 8 BIOLOGICAL LABORATORIES	
8.1 SCOPE OF SECTION	33
8.2 LABORATORY LAYOUT	33
8.3 SECURITY.....	33
8.4 VENTILATION	33
8.5 STERILIZATION.....	33
8.6 BIOLOGICAL WASTE DISPOSAL	34
8.7 ANIMAL ACCOMMODATION FACILITIES	34
8.8 ADDITIONAL REQUIREMENTS FOR ANIMAL ACCOMMODATION	35
8.9 REQUIREMENTS FOR PLANT HOUSES.....	35
8.10 REQUIREMENTS FOR INVERTEBRATE FACILITIES	35
SECTION 9 LABORATORIES IN WHICH RADIOACTIVE MATERIALS AND IONIZING RADIATIONS ARE USED	
9.1 SCOPE OF SECTION	36
9.2 GENERAL	36
9.3 MINIMUM CRITERIA FOR RADIOISOTOPE LABORATORIES.....	38
9.4 SUMMARY OF DESIGN REQUIREMENTS	42
9.5 STORAGE OF RADIOACTIVE MATERIALS	42
SECTION 10 SECONDARY SCHOOL LABORATORIES	
10.1 SCOPE OF SECTION	45
10.2 RETICULATED SERVICES	45
10.3 ELECTRICAL SERVICES	45
10.4 HAZARDOUS MATERIALS	45
APPENDIX A PLANNING, DESIGN AND CONSTRUCTION	47

FOREWORD

The Standard is intended to apply to a wide range of laboratories. It is recognized that certain common design principles apply to laboratories with quite different functions. Separate sections refer to the distinctive needs of biological, radiological, and secondary school laboratories.

A number of different types of hazards may be encountered in laboratories, including—

- (a) physical hazards including machinery or equipment in motion, parts under stress, noise, vibration, vacuum or pressurization;
- (b) flammable or explosive materials;
- (c) ignition sources;
- (c) temperature hazards including high temperature materials, cryogenic fluids;
- (d) electrical hazards including high voltages, live equipment, static charge;
- (e) chemical hazards including asphyxiants, oxidizers, carcinogens, toxins, sensitizing agents, corrosives, irritants and genotoxins;
- (f) biological hazards including infectious agents, allergens, irritants, genotoxins, zoonoses;
- (g) radiation including both ionizing and non-ionizing; and
- (h) ergonomic hazards, including repetitive and fixed postures, slips and trips.

Laboratory design and construction plays a fundamental and critical part in ensuring that laboratories are safe places to work. It is therefore necessary to consider in detail the type of hazards that apply to a particular laboratory and clearly define their nature and significance. This information is essential in order to maximize opportunities to eliminate hazards or to reduce risks to an acceptable level at the laboratory design and construction phase.