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RESPIRATORY PROTECTIVE DEVICES

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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Council of Trade Unions

Board of Fire Commissioners of New South Wales

Confederation of Australian Industry

Country Fire Authority

Department of Defence

Department of Health

Department of Industrial Relations, N.S.W.

Department of Mineral Resources, N.S.W.

Department of Productivity

Electricity Supply Association of Australia

Health Commission of New South Wales

Health Commission of Victoria

Metal Trades Industry Association of Australia

Metropolitan Fire Brigades Board, Melbourne

Metropolitan Water Sewerage and Drainage Board, N.S.W.

Safety Institute of Australia

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AUSTRALIAN STANDARD

RESPIRATORY PROTECTIVE DEVICES

AS 1716—1982

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PREFACE

This edition of this standard was prepared by the Association's Committee for Industrial Respiratory Protection to supersede AS 1716—1975.

This edition of the standard includes technical and editorial amendments necessary to cover new types of respirators introduced since 1975 and to take account of experience gained in the application of the 1975 edition.

Among the significant differences between this edition and the 1975 edition are the following:

(a) Requirements for disposable type (limited use) respirators have been included (Section 3).

(b) Requirements for powered type particulate respirators have been included (Section 4).

(c) Separate requirements have been included for units operating on negative pressure demand valves or positive pressure demand valves.

(d) Testing of gas respirators designed for self-rescue from atmospheres containing carbon monoxide has been modified because the earlier method was considered to place the test subjects at risk.

(e) Reduced limits for noise levels of air supplied and blower units have been specified.

(f) Advice on compounds against which canister respirators offer protection has been relocated in AS 1715.

(g) Air purity requirements for air supplies for airline respirators have been updated (see Appendix E).

(h) Requirements for compressed oxygen (dry breathing) for respirators have been included (see Appendix F).

(j) Marking requirements for respirators and components have been clarified.

(k) Wherever possible, design and dimensional requirements which may unnecessarily restrict design and development have been replaced by performance tests and criteria.

In regard to (k) the committee was aware of extensive draft proposals for respirators currently being studied overseas, particularly by the EEC members. However, earlier experience in Australia with inadequate industrial respirators and the heavy reliance which industrial users place on approval of respirators against AS 1716 have necessitated this edition continuing to place some reliance on minimal design criteria. In this regard, the International Organization for Standardization (ISO) has been encouraged to take the initiative in the development of a performance-based international standard. Also, a working group of the Australian Committee SF/10 has been charged with the task of developing a performance-based standard for consideration in the next edition of this standard.

Advice on the selection, use and maintenance of respiratory protective equipment is not covered in this standard but is given in AS 1715.

This standard requires reference to the following standards:

AS 1337	Eye Protectors for Industrial Applications
AS 1715	Respiratory Protection
AS 1801	Industrial Safety Helmets
AS 1944	The Identification of Medical Gas Cylinders
AS 2030	SAA Gas Cylinders Code
AS 2299	Underwater Air Breathing Operations
AS 2409	Interchangeable Conical Ground Glass Joints
AS 2473	Valves for Compressed Gas Cylinders (Threaded Outlet)
BS 2577	Methylene Blue Particulate Test for Respirator Canisters
BS 4400	Sodium Chloride Particulate Test for Respirator Filters

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SEE AMENDMENTS 1

STANDARDS ASSOCIATION OF AUSTRALIA

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for
RESPIRATORY PROTECTIVE DEVICES

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for respiratory protective devices intended to provide, according to type, varying degrees of protection against atmospheres containing substances which may be harmful if breathed; also, with certain types, protection against atmospheres which may be deficient in oxygen.

The standard lays down requirements to be observed in the design and manufacture of respiratory protective devices and specifies performance and testing criteria which must be met to secure approval for such devices.

It does not purport to give guidance in the selection, use and routine testing of the devices. Reference should be made to AS 1715 for such guidance and for determining the type of protection which should be provided for any particular condition.

The standard does not apply to respiratory protective devices for use in aircraft, or for operations underwater (see AS 2299).

1.2 APPLICATION. Every respirator shall comply with the general requirements of this Section and with the specific requirements of the particular Section applicable to the respirator type, as follows:

Particulate respirator—cartridge or canister type ..... Section 2
Particulate respirator—disposable type ..... Section 3
Particulate respirator—powered type ..... Section 4
Gas respirator—cartridge type ..... Section 5
Particulate and gas respirator—cartridge type ..... Section 6
Gas respirator—canister type ..... Section 7
Gas respirator—for self-rescue from atmospheres containing carbon monoxide ..... Section 8
Hose mask respirator ..... Section 9
Airline respirator—full facepiece type ..... Section 10
Airline respirator—half facepiece type ..... Section 11
Airline respirator—hood or helmet type ..... Section 12
Self-contained breathing apparatus—
Compressed air—open-circuit type ..... Section 13
Compressed air—open-circuit type, escape type ..... Section 14
Liquid oxygen—closed-circuit type ..... Section 15
Compressed oxygen—closed-circuit type ..... Section 16

1.3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

1.3.1 Respirator—a personal respiratory protective device.

1.3.2 Particulate (dust, mist or fumes) respirator—a respirator, used with a half or full facepiece, that has a particulate filter which removes finely divided solid or liquid matter from the air inhaled by the wearer.

The respirator may incorporate a replaceable cartridge or canister filter or, for disposable type respirators, may be constructed with the filter medium as an integral part of the construction.

1.3.3 Gas Respirator.

1.3.3.1 *Canister type*—a respirator, used with a full facepiece, that removes limited concentrations of certain gases from the air inhaled by the wearer, by use of a filter contained in a canister connected to a full facepiece. This type may also incorporate a filter to remove particulates.

1.3.3.2 *Cartridge type*—a respirator which removes low concentrations of gases from the air by use of a cartridge filter usually fitted to a half-mask (ori-nasal facepiece). This type may also incorporate a filter to remove particulates.

1.3.4 Hose mask respirator—a respirator, used with a full facepiece through which clean air from a source remote from the workplace is available to the wearer through an air hose at atmospheric or near atmospheric pressure.

1.3.5 Airline respirator—a respirator through which compressed clean air from a source remote from the workplace is supplied to the wearer by means of an airline. This type may be used with either a half or full facepiece, or with a hood or helmet.

1.3.6 Powered respirator—a respirator incorporating a half or full facepiece, hood or helmet, which provides the wearer with air filtered through a powered filtering unit, comprising a filter or filters, and an electrically operated blower unit.

1.3.7 Disposable respirator—a respirator which has no replaceable parts and which is discarded after limited use.

1.3.8 Self-contained breathing apparatus—a respirator which supplies the wearer with air or oxygen from containers carried by him.

1.3.9 Demand valve—a device for the controlled release of air or oxygen actuated by a reduction in pressure created by the action of inhalation.