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# Australian Standard 1716—1984

# RESPIRATORY PROTECTIVE DEVICES

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STANDARDS ASSOCIATION OF AUSTRALIA
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The following interests are represented on Committee SF/10:

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 Health, N.S.W.

Department of Industrial Relations, N.S.W.

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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—1984


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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—1982.

This edition of the standard is technically identical to AS 1716—1982, and differs only by those amendments necessary to clarify some minor ambiguities and errors found by experience gained in the application of the 1982 edition and by incorporation of the cylinder valve requirement introduced by amendment in 1983.

The significant differences between the 1982 edition and the 1975 edition are maintained in this edition and include 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.

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STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard
# 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.**

**1.2.1 Requirements of This Standard.** 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
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Hose mask respirator ..... Section 9
Airline respirator—full facepiece type ..... Section 10
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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

**1.2.2 Referenced Documents.** The following standards are referred to in this standard:

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|---|---|
| AS 1337 | Eye Protectors for Industrial Applications |
| AS 1715 | Selection, Use and Maintenance of Respiratory Protective Devices |
| 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. |

**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.