

# Australian Standard 1715—1982

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## SELECTION, USE AND MAINTENANCE OF RESPIRATORY PROTECTIVE DEVICES



**STANDARDS ASSOCIATION OF AUSTRALIA**  
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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  
Safety Institute of Australia

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This standard, prepared by Committee SF/10, Industrial Respiratory Protection, was approved on behalf of the Council of the Standards Association of Australia on 9 November 1981, and was published on 22 February 1982.

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*This standard was issued in draft form for comment as DR 80246.*

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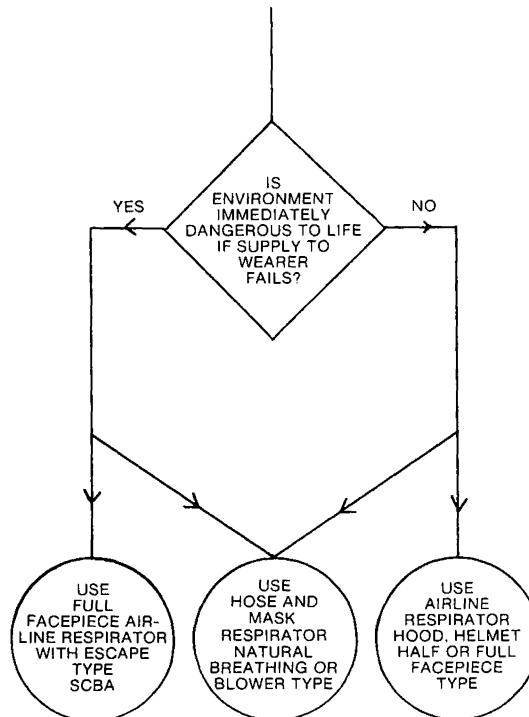
**CORRIGENDA**  
to  
**AS 1715—1982**  
**SELECTION, USE AND MAINTENANCE OF RESPIRATORY**  
**PROTECTIVE DEVICES**

*SUMMARY:* This correction slip applies to Table 3.2.

Published on 5 April 1982.

**Page 15. Table 3.2.**

*Replace* extreme right-hand section with the following:



*Insert* the following Note in top right-hand corner of page:

**NOTE:** This table cannot cover all considerations for all applications of respiratory protective devices and must be read in conjunction with Section 3 of AS 1715.



AUSTRALIAN STANDARD

# SELECTION, USE AND MAINTENANCE OF RESPIRATORY PROTECTIVE DEVICES

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## PREFACE

This edition of this standard was prepared by the Association's Committee for Industrial Respiratory Protection to supersede AS 1715—1975.

This edition 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.

Requirements for the design, testing and performance of respiratory protective devices are not covered in this standard but are specified in AS 1716.

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

- (a) Advice is given on the selection, use and maintenance of the newer types of respirators, e.g. powered particulate respirators, disposable respirators.
- (b) Detailed information is included on the characteristics of the different types of supplied air devices, e.g. negative pressure demand type and positive pressure demand type, and factors important in selection and use of particular types.
- (c) A flowchart provides guidance in the identification of suitable protective devices.
- (d) Advice on protection factors applicable to the various types of respirators is given. It is emphasized that such factors are likely to be significantly varied by everyday influences such as facepiece adjustment or skin condition and must therefore be taken only as one component of the various selection and proper usage criteria.
- (e) Advice on compounds against which canister respirators offer protection has been included (Appendix D).

This edition also takes account of comment submitted on the DR 79053 (draft revision of AS 1716) but considered more appropriate to this standard.

This standard requires reference to the following standards:

AS 1319	Rules for the Design and Use of Safety Signs for the Occupational Environment
AS 1565	Copper Alloy Ingots and Copper and Copper Alloy Castings
AS 1572	Seamless Copper and Copper Alloy Tubes for General Engineering Purposes
AS 1716	Respiratory Protective Devices
AS 1881	Zinc Alloy Ingots (for Pressure Diecasting) and Zinc Alloy Pressure Diecastings
AS 2030	SAA Gas Cylinders Code
AS 2299	Underwater Air Breathing Operations
AS 3000	SAA Wiring Rules

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## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**  
for  
**SELECTION, USE AND MAINTENANCE OF RESPIRATORY PROTECTIVE DEVICES**

## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This standard sets out recommendations for the selection, use and maintenance of personal devices for the protection of the body against atmospheres deficient in oxygen and/or against harmful substances which could enter the body through the respiratory system; such harmful substances include dusts, mists, fumes, smokes, gases and vapours.

It does not deal with the special problems connected with diving and underwater breathing (see AS 2299) nor the use of respirators in aircraft.

Design, manufacturing and type approval test requirements for respiratory protective devices are not covered in this standard, but are specified in AS 1716.

**1.2 GENERAL PRINCIPLES OF RESPIRATORY PROTECTION.** The following general principles should be observed in the protection of the body against the effects of inhaling harmful substances:

- (a) No person should be exposed to an atmosphere that is or may be injurious to health.

There are substances which are irritant to or which can be absorbed through the skin. Where an atmosphere containing such substances is to be entered, respiratory protection alone is not sufficient and the whole of the body should be protected.

- (b) In all cases where it is possible that the atmosphere can be contaminated by toxic substances, a regular system of testing the atmosphere surrounding the workplace, by a properly trained and responsible person using suitable equipment, should be undertaken.

- (c) Every effort should be made to prevent the release of harmful substances into the working environment. This may be achieved by the correct design of buildings, plant, equipment, by correct working methods and conditions and by appropriate controls at their source.

- (d) If efforts to prevent or control the hazard are unsuccessful, suitable respiratory protective devices should be provided and used.

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

**1.3.1 Atmospheric contaminant**—any substance, either gaseous or particulate, which is not a constituent of the normal atmosphere.

**1.3.2 Particulate**—the generic name for dusts, mists, smokes and fumes.

NOTE: The term 'dust respirator' is often used to describe a respirator capable of filtering all the above defined forms of particulates.

**1.3.3 Dusts**—solid particles suspended in the air as a result of the disintegration of matter.

**1.3.4 Mists**—airborne droplets. The droplets may carry substances in solution or particles in suspension. Mists are usually formed by the condensation of vapour but may be produced by the atomization of a liquid.

**1.3.5 Fumes**—airborne suspension of solid particles or metallic oxides formed by the volatilization and condensation of matter, e.g. metals, organic materials.

**1.3.6 Smokes**—particles of low vapour pressure suspended in the air. Smokes settle slowly under gravity and are characterized by their mode of formation which may include combustion, destructive distillation, volatilization and condensation, and chemical and photochemical reactions.

**1.3.7 Toxic gases and vapours**—gases and vapours capable of producing injury once they reach a susceptible site in or on the body in a sufficient concentration.

NOTE: The term 'gas' when used in this standard includes vapours.

**1.4 CLASSIFICATION OF INHALATION HAZARDS.** For the purpose of this standard, respiratory protective devices are devices designed to give protection against one or more of the following types of atmospheric hazard:

- (a) Deficiency of oxygen.
- (b) Contaminants in particulate form.
- (c) Contaminants in gaseous or vapour form.

Devices which are designed to give protection against all three types of atmospheric hazard should be used where the type or extent of atmospheric hazard is unknown.

Some devices are designed to give protection against contaminants only, others against particulates, and some against certain gases and vapours but not against oxygen deficiency. Such devices do not give universal protection and should be used only when the type and concentration of the hazard are known and where no oxygen deficiency could exist.