

AS 3814 — 2000
AG 501 — 2000

Australian Standard™

**Industrial and commercial
gas-fired appliances**

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This Standard was prepared by the Industrial Gas Equipment Standards Committee (AG/5) of The Australian Gas Association. As an accredited Standards Development Organisation, The Australian Gas Association develops and publishes Australian Standards. The Standard was approved on behalf of the Gas Technical Standards Council on 2 February 2000, and published in February 2000.

The following interests are represented on AG/5:

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ALPGA (Australian Liquefied Petroleum Gas Association Ltd)
Appliance and Component Testing Bodies
GAEC (Gas Appliance and Equipment Committee)
GAMAA (Gas Appliance Manufacturers Association of Australia)
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This Standard was issued in draft form for comment as DR 99492 CP.

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**Industrial and commercial
gas-fired appliances**

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PREFACE

The Industrial Gas Equipment Standards Committee, a Technical Standards Committee of The Australian Gas Association (AGA), has prepared this Standard. It is a revision of the 1998 edition and incorporates both technical and editorial amendments.

The Standard is intended to provide uniform minimum requirements for the safe operation of gas-fired industrial appliances, and other large appliances used for commercial applications, which are not covered by any other AGA Standard.

This Standard should not be regarded as a design specification or as an instruction manual; it has been prepared with due regard for gas rules and regulations now in force. In its preparation, consideration has been given to:

- continuity of satisfactory operation of appliances and equipment;
- the prevention of fire hazards, and explosions;
- the prevention of injury to persons or property; and
- the provision of satisfactory permanent access for service.

Explosions are the main hazard on the firing side of the equipment covered by the Standard; the basic cause being ignition of a combustible mixture in the combustion chamber or associated ductwork. The magnitude and intensity of the explosion will depend on both the quantity of combustibles present and the proportion of air with which the combustibles are mixed.

Explosions may be the result of one or more of the following:

- improper design of equipment or control systems;
- equipment or control system malfunction, including valve leakage;
- interruption and restoration of gas or air supply causing loss of flame followed by delayed ignition of the resultant accumulation of a combustible mixture; or
- flame failure on a burner and subsequent ignition of the resultant accumulation of a combustible mixture.

The presence of a well trained, reliable and competent operator provides a major contribution to safety.

The contents of the Standard will be subject to periodic review and suggestions for improvement will be welcomed. These should be forwarded to:

Manager Standardisation Policy and Services
The Australian Gas Association
PO Box 22 Braeside VIC 3195

The Australian Gas Association does not accept responsibility for any inadequacies in this Standard, and compliance with this Standard does not in any way remove the responsibility from any installation, commissioning or maintenance personnel for ensuring that the appliance is in a safe condition at all times.

This Standard has no legal authority in its own right, but may acquire legal standing in one or more of the following circumstances:

- adoption by a government or other authority having jurisdiction over relevant installations;
- adoption by a purchaser as the required standard of construction when placing a contract for a relevant installation; or

- adoption where a contractor states that an installation is in accordance with the Standard.

Terms or words that are indicated by italics in the text are defined terms or words. Section 1 contains the definitions of such terms or words as they apply to the Standard. Defined terms or words are not indicated in headings, tables, figures or notes.

Matters of an advisory nature are indicated in the following manner:

- the word NOTE(S) followed by a statement(s);
- by the inclusion of them in an informative appendix.

The terms “normative” and “informative” have been used in this Standard to define the application of the appendix to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Technical changes are identified with one or two stars in the left-hand margin of the page. A single star indicates an amendment to an existing Clause, whilst two stars indicates a new Clause. The following examples show how the markings are used:

* **Clause number** **Clause title**

* * **Clause number** **Clause title**

The same markings are used, as appropriate, in Tables and Figures.

Editorial changes have not been identified, as their purpose is to improve readability of the Standard and they do not impact on technical requirements.

Clause renumbering has been carried out as necessary.

This edition of the Standard was approved by the Industrial Gas Equipment Standards Committee on 20 December 1999 and published in February 2000.

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SECTION 1 SCOPE, APPLICATION AND DEFINITIONS

1.1 SCOPE

1.1.1 General

This Standard provides minimum requirements for the design, construction and safe operation of *Type B appliances* which use *Town Gas, Natural Gas, Simulated Natural Gas, Liquefied Petroleum Gas, Tempered Liquefied Petroleum Gas* or any combination of these gases either together or with other fuels.

Construction requirements given relate only to matters affecting *gas-firing* or to any interconnection between the *gas-firing* system and the safety requirements of the *appliance*.

NOTE: Additional information regarding safety principles for industrial appliances is given in AS 1375.

The Standard does not cover all the requirements for the safety of the process carried out in the *appliance*. These requirements should be obtained from the relevant *Authority having jurisdiction*.

Installation requirements for *appliances* covered by this Standard are detailed in AS 5601 / AG 601.

1.1.2 Exclusions from Standard

The following *appliances* are excluded from this Standard.

- (a) Manually operated bunsen type *burners*.
- (b) Simple atmospheric *burners* which are not fitted into a combustion chamber and burn in an open ventilated space under the control of an operator.
- (c) Engines other than stationary engines.

1.2 APPLICATION

1.2.1 General

The requirements of this Standard shall be used in conjunction with, but do not take precedence over, the requirements of the relevant *Authority having jurisdiction*, and apply to:

- (a) the *appliance* and
- (b) the component parts of the *appliance* whether supplied with the *appliance* or separately.

This Standard applies to *Type B appliance* approvals commenced after its publication date.

NOTES:

- 1 "Commenced", for the purpose of this Clause, means the point at which Type B acceptance has begun.
- 2 Appliances should comply with requirements of all Authorities before being placed into service (eg. electrical, water board, etc).

1.2.2 Appliance installation

Before an *appliance* is connected to a *gas* supply a submission containing the standard and technical data specified by the *Authority* shall be forwarded to the *Authority*, in accordance with the administrative procedures of the *Authority*.

NOTE: Typical data and procedural requirements are given in Appendices A and B.