AS 3814—2005

Australian Standard™

Industrial and commercial gas-fired appliances

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Industrial and commercial gas-fired appliances

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PREFACE

This Standard was reviewed by the Standards Australia Committee, AG-011, Gas Components and Industrial Equipment, to supersede AS 3814/AG 501—2002, *Industrial and commercial gas-fired appliances*. The Standard is republished without technical alterations.

The objective of this Standard is 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 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—

(a) continuity of satisfactory operation of appliances and equipment;

(b) the prevention of fire hazards, and explosions;

(c) gas rules and regulations now in force;

(d) the prevention of injury to persons or property;

(e) the provision of satisfactory permanent access for service; and

(f) relevant International Standards.

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—

(i) improper design of equipment or control systems;

(ii) equipment or control system malfunction, including valve leakage;

(iii) 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

(iv) 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 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.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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1.1 SCOPE

1.1.1 General

This Standard provides minimum requirements for the design, construction and safe operation of Type B appliances that 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. Other statutory and regulatory requirements may be applicable to the appliances and/or installations that fall within the scope of this Standard. It is the installer/manufacturer's responsibility to ensure that appliances and/or installations comply with these requirements.

Installation requirements for appliances covered by this Standard are detailed in AS 5601.

1.1.2 Exclusions from Standard

The following appliances are excluded from this Standard:

(a) Manually operated bunsen type burners.

(b) Simple atmospheric burners that 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 technical regulator. The technical regulator may determine the extent of application of this Standard.

This Standard applies to—

(a) the appliance; and

(b) the component parts of the appliance whether supplied with the appliance or separately; and