



Government of **Western Australia**
Department of **Commerce**
EnergySafety

**TECHNICAL AND SAFETY REQUIREMENTS
FOR
TYPE A GAS APPLIANCES**

ISSUED BY THE
DIRECTOR OF ENERGY SAFETY
WESTERN AUSTRALIA

August 2009

PREFACE

This document sets out technical and safety compliance requirements for Type A gas appliances. The document has been prepared and issued by EnergySafety WA for the purpose of facilitating the publication of this information in the *Government Gazette*.

EnergySafety WA is the State's electricity and gas industry safety regulator, and is headed by the Director of Energy Safety, a position established under s.5 of the *Energy Coordination Act 1994*.

Type A gas appliances are those gas appliances of a domestic or small commercial use nature that are listed in Schedule 1 of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*.

The provisions of s.13D of the *Gas Standards Act 1972* require *inter alia* that a person shall not sell, hire, advertise for sale or install a Type A gas appliance unless the appliance —

- a) is a gas appliance that is approved by the Director or is of a class or type of gas appliance that is approved by the Director; and
- b) is marked, stamped or labelled in the manner approved by the Director.

The Act also provides that the Director may refuse to approve of an application in respect of —

- a) a Type A gas appliance; or
- b) a class or type of Type A gas appliance

if the Director is satisfied that the appliance or class or type of appliance does not comply with a standard or requirement specified by the Director, by notice published in the *Government Gazette*.

Furthermore the provisions of the *Gas Standards Act 1972* —

- 1) allow the Director to delegate to an inspector (appointed by the Director) his/her power to approve (or not approve) individual Type A gas appliances as described above; and
- 2) allow the Director to also adopt the approval by other bodies or authorities, of individual Type A gas appliances as well as classes or types of Type A gas appliances, and where the Director decides to adopt such an approval, the Act stipulates that the Director may do so either generally or subject to such conditions and restrictions as the Director may impose, and the Director must publish in the *Government Gazette* a notice setting out the fact of the approval and the conditions and restrictions (if any) that apply in relation to the approval.

Industry is advised that the Director has exercised the power to appoint certain WA inspectors for the purpose of (1) above and has also notified in the *Government Gazette* the names and details of several bodies whose approvals he/she has adopted per (2) above.

To complete the specification of requirements associated with (a) and (b) above, the Director also needs to specify by notice in the *Government Gazette* the minimum (or essential) standards or requirements with which the appliances must comply.

The purpose of this document is to set out these standards and requirements so that they may be referenced in the *Government Gazette*.

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1.0 SCOPE

This document sets out essential requirements for gas equipment, including Type A appliances and their components, to ensure that —

- a) the equipment is constructed in accordance with good engineering practice in regard to safety and other requirements; and
- b) it does not endanger the safety of persons (particularly children, the elderly and people with disabilities), domestic animals or property when properly installed, maintained and used in applications for which it was intended.

The essential requirements as set out in this document represent the minimum safety and other requirements with which gas equipment in Western Australia shall comply.

1.1 Definitions

For products manufactured in Australia, 'supplier' means the manufacturer, or, where a completed product is manufactured for exclusive supply to a second agent, the second agent will also be identified as the supplier.

For products manufactured outside Australia, 'supplier' means the manufacturer's principal local agent or importer having an address in Australia.

2.0 ESSENTIAL REQUIREMENTS

2.1 GENERAL CONDITIONS

2.1.1 Suppliers' obligation

A supplier shall ensure that appliances are designed and built so as to operate safely and present no danger to persons, domestic animals or property when installed and used in accordance with Supplier's instructions.

2.1.2 Instructions and warnings

Each appliance offered for sale shall be —

- a) accompanied by comprehensive installation instructions;
- b) accompanied by instructions explaining use and maintenance; and
- c) bear any required permanent warning notices, which shall also appear on the packaging.

The instructions and warning notices shall be in plain English and may be supplemented by appropriate diagrams, pictures or drawings.

2.1.3 Technical Content of instructions

The Supplier's instructions shall contain all information for installation, commissioning, use and maintenance of the appliance in any foreseeable application to ensure that those operations are correctly performed and that the appliance may be used safely. In particular the instructions shall specify —

- a) The type of gas to be used;
- b) The gas supply pressure at a specified point;
- c) The ventilation requirements —
 - (i) for combustion air supply;
 - (ii) to avoid the formation of unburned gas mixtures;
 - (iii) for other purposes such as to maintain room air quality;
 - (iv) the conditions for disposal of combustion products; and

any special requirements.

2.1.4 Content of instructions for users

The instructions for use and maintenance intended for the user shall contain all the information required for safe use, and shall particularly draw the user's attention to any restrictions on use or special precautions required to ensure safety.

2.1.5 Warnings on packaging

The warning notices on the appliance and its packaging shall clearly state any restrictions on use, in particular the restrictions whereby the appliance shall be installed only in areas where there is sufficient ventilation.

2.1.6 Design of components

Components intended to be part of an appliance shall be so designed and built as to fulfil correctly their intended purpose when incorporated in accordance with the instructions for installation.

2.1.7 Instructions

Instructions for installation, adjustment, operation and maintenance of components shall be provided with the components concerned where appropriate.

2.2 MATERIALS

2.2.1 Suitability of materials

Materials shall be appropriate for their intended purpose and shall withstand the physical, chemical and thermal conditions to which they will foreseeably be subjected.

2.3 DESIGN AND CONSTRUCTION

2.3.1 General

2.3.1.1 Durability

An appliance shall be constructed so that, when used in accordance with the instructions of the Supplier, no mechanical instability, distortion, breakage or undue wear likely to compromise its safety can occur.

2.3.1.2 Condensation

Condensation from flue gases produced at the start-up or during use shall not affect the safety of an appliance.

2.3.1.3 Risk of explosion

An appliance shall be so designed and constructed as to minimise the risk of explosion in the event of a fire of external origin.

2.3.1.4 Integrity of gas piping

An appliance shall be so constructed that the gas supply piping remains free from contamination by air, water or other material which could compromise safe operation.

2.3.1.5 Normal electrical supply variation

The appliance design shall ensure that in the event of a normal fluctuation of the electricity supply, it shall continue to operate safely.

2.3.1.6 *Abnormal electrical supply variation*

The appliance design shall ensure that abnormal fluctuation or failure of the electricity supply or its restoration shall not lead to an unsafe situation.

2.3.1.7 *Electrical hazards*

An appliance shall be so designed and constructed as to obviate hazards of electrical origin.

2.3.1.8 *Pressurised parts*

All pressurised parts of an appliance shall withstand the mechanical and thermal stresses to which they may be subjected without any deformation affecting safety.

2.3.1.9 *Redundancy of controls*

An appliance shall be so designed and constructed that the failure of any one safety, controlling or regulating device will not lead to an unsafe situation.

2.3.1.10 *Hierarchy of safety controls*

If an appliance is equipped with safety devices and controlling devices, the functioning of the safety devices shall not be compromised by those of the controlling devices.

2.3.1.11 *Protection of preset controls*

All adjustable components of an appliance which are preset during manufacture and which shall not be adjusted by the user or installer shall be appropriately protected from such adjustments.

2.3.1.12 *Marking of controls*

Controlling devices shall be clearly marked and have appropriate signs to indicate correct operation. Their design shall be such as to preclude accidental operation. Appliance burner controls shall indicate the safe turn-down position.

2.3.2 Unburned gas release

2.3.2.1 *Gas leakage*

An appliance shall be so designed and constructed so that it is gas tight and cannot give rise to a hazardous situation.

2.3.2.2 *Release of unburnt gas during ignition*

An appliance shall be so designed and constructed that gas release during ignition, re-ignition and after flame extinction is limited to avoid a dangerous accumulation of unburned gas in and around the appliance.

2.3.2.3 *Release of unburnt gas during operation*

An appliance shall be so designed to avoid dangerous accumulation of unburned gas during operation.

2.3.3 Ignition

An appliance shall be so constructed that, when used in accordance with the supplier's instructions:

- c) ignition and re-ignition is reliable and complete, and
- d) burner cross-lighting is assured.

2.3.4 Combustion

2.3.4.1 *Quality of combustion*

An appliance shall be so designed and constructed that, when used in accordance with the Supplier's instructions, flame stability is assured, the emission of substances harmful to health is minimised and no other fire hazard arises.

2.3.4.2 *Release of combustion products*

An appliance shall be so designed and constructed that when used in accordance with Supplier's instructions, there will be no unwanted release of combustion products.

2.3.4.3 *Abnormal draught conditions*

An appliance designed for connection to a flue for the removal of combustion products shall be so constructed that in abnormal draught conditions there is no release of combustion products in a dangerous quantity when installed in accordance with the Supplier's instructions.

2.3.4.4 *Emissions from unflued appliances*

When installed and used in accordance with the Supplier's instructions a flueless heating appliance shall not release combustion products at concentrations likely to present a danger to the health of persons or domestic animals.

2.3.5 Temperature

2.3.5.1 *Surrounding surfaces*

Parts of an appliance installed in close proximity to combustible surfaces shall not reach temperatures which create a hazard or cause changes in surrounding materials that may accumulate and cause a hazard.

2.3.5.2 *Appliance controls*

Appliance design shall ensure that the surface temperatures of appliance controls intended to be operated shall not present a danger to the user.

2.3.5.3 *Surfaces likely to be touched*

Appliance design shall ensure that the surface temperature of parts of appliance which are likely to be touched shall not under any operating conditions present a danger to the user.

2.3.5.4 *Dangers to children*

Appliances shall be designed taking into account the dangers to children.

2.3.6 Rational use of energy

Appliances shall be so constructed as to ensure rational use of energy, taking into account safety aspects.

2.3.7 Foodstuffs and water used for sanitary purposes

Without prejudice to other legislation in this respect, materials and components used in the construction of an appliance which may come into contact with water used for sanitary purposes or food, shall not impair their quality.

APPENDIX 1

PROCEDURAL REQUIREMENTS FOR THE APPROVAL OF TYPE 'A' GAS APPLIANCES

The following procedural requirements do not form part of the technical and safety requirements (the "essential requirements") for Type A gas appliances ("products") which are detailed in Section 2 of this document, but are provided here for information as they are important, related regulatory requirements with which:

- bodies or authorities that the Director has recognised as competent for approving appliances must comply as a condition of the Director's adoption of their approvals; and
- Inspectors approving appliances under a delegated power of the Director must comply.

1. Assessment and approval of mass produced product

The approval must be carried out by an approval entity accepted by the Director of Energy Safety (the "Director") under section 13F of the *Gas Standards Act 1972*, by notice in the *Government Gazette*.

The approval process of such an entity is required to satisfy all of the following, as a condition of the Director's adoption of the entity's approvals:

- a) The approval entity is satisfied that the product, through inspection and type testing by a laboratory with relevant NATA accreditation, complies with the essential requirements detailed in the document *Technical and Safety Requirements for Type A Gas Appliances* as amended from time to time and published by the Director. This assessment must be attained directly by the approval entity, not through secondary arrangements with other approval or certification entities, although use may be made of an endorsed report from a laboratory accredited by a body with which NATA has a mutual recognition agreement.
- b) The approval entity may consider the product complies with the essential requirements if the product is of a type for which an individual, specific Australian Standard exists and the approval entity is satisfied the product fully complies with this Australian Standard (unless the Director in writing authorises one or more variations to the requirements contained in the Standard).
- c) If the product is of a type for which an individual, specific Australian Standard does not exist, the approval entity shall be satisfied that the range of tests and inspections to which the product has been successfully subjected is adequate to ensure compliance with all the essential safety requirements and shall provide detailed written advice on the range and outcomes of tests conducted if requested to do so by the Director.

- d) The manufactured product shall bear an approval mark as required by the Director (currently approval entities may apply their own mark, but this may change in the future, requiring instead the application of a uniform approvals mark owned and endorsed by all regulators).
- e) Any approval has validity for a period of no more than 5 years and during this period the approval entity will conduct regular compliance checks to ensure that the manufactured product supplied to the market in Australia continues to be identical to that tested and assessed and continues to comply with the essential requirements. The approval entity may as part of this process consider any compliance test report, covering also any Australian variations from an ISO or EN Standard, and related certificate from a recognized body.
- f) The documentation detailing the type testing work and outcomes including laboratory reports and copies of certificates issued shall be filed by the approval entity and on request made available for audit by EnergySafety personnel.

2. Assessment and approval of individual products or limited quantities of manufactured product (20 or less items per year)

The approval must be carried out by an Inspector who has been designated by the Director and additionally provided with powers for appliance approval by the Director under s.13D(3) of the *Gas Standards Act 1972*.

The approval process is required to satisfy all of the following, as a condition of the application of the Director's powers in relation to product approval:

- a) The inspector is satisfied that the product, through inspection and individual testing, complies with the essential requirements detailed in the document *Technical and Safety Requirements for Type A Gas Appliances* as amended from time to time and published by the Director.
- b) If the product is of a type for which an individual, specific Australian Standard exists then the product shall be tested in accordance with the Approval Requirements for Individual Certification (second tier) published in the relevant Australian Standard. The results of the testing shall be recorded in accordance with the Individual Certification check list which appears in the appendices of each Standard and the completed test report shall be filed and on request made available for audit by EnergySafety personnel.
- c) If the product is of a type for which an individual, specific Australian Standard does not exist, the inspector shall be satisfied that the range of tests and inspections to which the product has been successfully subjected is adequate to ensure compliance with all the essential safety requirements and shall provide detailed written advice to the Director on the range and outcomes of tests conducted and must obtain the Director's endorsement for same, before issuing the approval.
- d) Each manufactured product shall bear the badge of approval mark as required by the Director.