

Hazardous area classification and gas installations covered by gas industry codes



Contents

Background	2
Legislation	2
Hazardous area classification	3
AS/NZS IEC 60079.10.1: 2022 Sup 1:2022 (the Supplement)	4
Gas appliances	4
Gas installations	4
Further information	5
Copyright	5
Purchasing Standards	5

Background

The Department of Energy, Mines, and Industry Regulation and Safety – Building and Energy Division (Building and Energy) has received inquiries regarding the applicability of using the hazardous area classifications provided in the obsolete article, Hazardous Area Classification of Consumer Gas Installations (Energy Bulletin 67, 2014).

This guidance document informs industry about the gas installation requirements covered by specific gas industry codes (Standards), where domestic and commercial consumer piping and appliance installations are generally considered non-hazardous. For example, classified as not creating a hazardous area.

Legislation

In Western Australia, the [Gas Standards \(Gasfitting and Consumer Gas Installations\) Regulations 1999](#) (the Regulations) set out the requirements for consumer gas installations, which must comply with:

- the requirements in Schedule 6 of the Regulations; and
- the codes or standards set out in Schedule 7 of the Regulations.

Schedule 7 of the Regulations calls for the following standards:

- **AS/NZS 5601**, Gas installations
- **AS 3814**, Industrial and commercial gas-fired appliances
- **AS/NZS 1596**, The storage and handling of LP Gas.

Similarly, all electrical installations in Western Australia are required to comply with AS/NZS 3000, known as the [Wiring Rules](#). This standard requires the person in control of the installation to assess the hazardous area classification of the installation. Since consumer gas installations involve combustible gases, they may pose potential hazards.

A hazardous area is defined in the Wiring Rules as: an area in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of equipment.¹

A non-hazardous area (on account of explosive gas atmospheres) is defined in the Wiring Rules as: an area in which an explosive gas atmosphere is not expected to be present in quantities such as to require special precautions for the construction, installation and use of equipment.²

¹ Clause 1.4.15 of the Wiring Rules (AS/NZS 3000:2018)

² Clause 3.2.2 of AS/NZS 60079.14 (2022)

Hazardous area classification

As recognised within the Wiring Rules, the responsibility for classification of a hazardous area rests with the persons or parties in control of the installation (typically the owner or occupier of the premises), in accordance with the requirements contained in:

- **AS/NZS 60079.10.1** (Explosive atmospheres Classification of areas - Explosive gas atmospheres) for gas or vapour; and
- **AS/NZS 60079.10.2** (Explosive atmospheres Classification of areas - Explosive dust atmospheres) for combustible dusts.³

AS/NZS 60079.10.1 establishes that hazardous area classification is a method of analysing and classifying the environment where explosive gas atmospheres may occur, to facilitate the proper selection, installation and operation of equipment to be used safely in that environment.

The classification also takes into account the ignition characteristics of the gas or vapour, such as ignition energy and ignition temperature.⁴ The measures, conditions or control shall be documented by a competent person who:

- is familiar with the requirements for this, and any other relevant standards and codes of practice concerning the use of electrical equipment and systems for use in hazardous areas; and
- has access to all information necessary to carry out the assessment.⁵

A **competent person** is defined as an individual that can demonstrate appropriate technical knowledge and relevant skills to make the necessary assessments of the safety aspect under consideration.⁶

AS/NZS 60079.10.1 has a series of clauses to support a competent person, giving guidance on the procedure for classifying areas in which there may be an explosive gas atmosphere. This standard contains detailed recommendations regarding the extent of the hazardous areas in specific industries or applications, where reference may be made to national or industry codes relating to those applications.

³ Clause 7.7.2.1 of the Wiring Rules (AS/NZS 3000:2018)

Note: The responsibility for classification of a hazardous area does not rest with a licensed electrician, or a gasfitter. Once an area in which an explosive atmosphere is to be present is classified via the preparation of an area classification and dossier (or otherwise determined by a competent person to be non-hazardous), an electrician should have the necessary information to select and install electrical equipment in, or related to the protection of electrical equipment in a hazardous area in accordance with the Wiring Rules and AS/NZS 60079.14.

⁴ Clause 4.2 of AS/NZS 60079.10.1 (2022)

⁵ Clause 4.1 of AS/NZS 60079.14 (2022)

⁶ Clause 3.1.1 of AS/NZS 60079.14 (2022)

In that context, AS/NZS 60079.10.1 addresses the use of industry codes and national standards⁷, including fuel gas installations, which establishes that: in most cases compliance to the relevant gas codes would result in a classification of non-hazardous or lead to a zone of negligible extent.

In addition, AS/NZS 60079.10.1 Annex K provides examples of relevant codes and standards that may provide details and examples of hazardous area classifications. Table K.1 identifies the Australian and New Zealand standard AS/NZS (IEC) 60079.10.1 with its additional details included in the following national supplement.

AS/NZS IEC 60079.10.1: 2022 Sup 1:2022 (the Supplement)

The Supplement establishes its objective to provide commentary and additional information to support the application of AS/NZS IEC 60079.10.1: 2022.⁸ The contents of Appendix E include classification examples for Flammable Gasses – Gas Industry Codes (Standards), and address LPG systems, LNG systems, gas appliances and consumer installations.

Gas appliances⁹

Clause E.1.1 of the supplement provides that: where odorized gas is used and operating pressures do not exceed 200 kPa, the application of gas industry codes and standards that are generally prescribed or preferred under gas safety legislation for appliances and gas piping is intended to ensure the integrity of the installation such that these applications may be considered non-hazardous (NH). Strict adherence to AS 3814 and AS/NZS 5601.1, as applicable, supports this concession.

The above concession is not applicable where the performance-based solution is considered as an alternative means of compliance in accordance with section 2 of AS/NZS 5601, being the essential safety and performance-based design requirements or Appendix O of AS 3814-2018 being the fitness for purpose assessment.

Gas installations¹⁰

Clause E.1.1 of the supplement addresses domestic and commercial consumer installations: Consumer installations are those systems that are located downstream of a supply point. The supply point may be immediately downstream of a consumer billing meter, an LPG or LNG supply (for example, tank or cylinder first stage regulator), or a supply source in a privately owned and operated biogas installation.

⁷ Clause 5.3.2 of AS/NZS 60079.10.1 (2022)

⁸ Preface and introduction of AS/NZS IEC 60079.10.1: 2022 Sup 1:2022 (the Supplement)

⁹ Appendix E.1.1 of the Supplement

¹⁰ Appendix E.1.2 of the Supplement

Domestic or commercial installations (for example, hospitality, education, health or similar institutions) primarily providing gas for cooking or heating purposes are generally low pressure and not deemed to be a hazard.

The classification of these consumer piping and appliance installations are considered non-hazardous.

Further information

Contact Building and Energy:

email: be.info@demirs.wa.gov.au

phone: (08) 6251 1900

Copyright

Content originally produced by Energy Safe Victoria with the permission of Standards Australia Limited. Content has been adapted for a Western Australian audience by the Department of Energy, Mines, Industry Regulation and Safety.

Purchasing Standards

To purchase a copy of these Standards, see the [Standards Australia store](#).

**Department of Energy, Mines, Industry Regulation and Safety
Building and Energy**

Office: Level 1, 303 Sevenoaks Street, Cannington WA 6107
Post: Locked Bag 100 East Perth WA 6892

Phone: 1300 489 099 Fax: (08) 6251 1901

Email: be.info@demirs.wa.gov.au

Web: <https://www.wa.gov.au/organisation/building-and-energy>

National Relay Service: 13 36 77

Quality of service feedback line: 1800 304 059

This publication is available in other formats on
request to assist people with special needs.