Gas Information Sheet 42

Hazardous Area Classification and Gas Installations covered by Gas Industry Codes

Background

Energy Safe Victoria is aware of industry participants classifying some industrial and commercial gas installations within consumer premises as hazardous areas. This information sheet is published to inform industry about the gas installations covered by specific Gas Industry Codes (Standards), where domestic and commercial consumer piping and appliance installations are generally considered non-hazardous (classified as not creating a hazardous area).

Legislation

In Victoria, Gas Safety legislation[1] mandates that all gasfitting work (construction, installation, replacement, repair, alteration, maintenance, testing or commissioning) of a gas installation is to be carried out in accordance with:

- AS/NZS 5601.1 (Gas installations, Part 1: General installations),
- AS/NZS 5601.2 (Part 2: LP Gas installations in caravans and boats for non-propulsive purposes),
- AS 4575 (Gas appliances — Servicing of Type A appliances)

and other normative referenced technical standards, including:

- AS 3814 (Industrial and commercial gas fired appliances)
- AS/NZS 1596 (The storage and handling of LP Gas).

Similarly, Electricity Safety legislation[2] mandates that all electrical installation work (installation, alteration, maintenance and repairs) are to be carried out in accordance with AS/NZS 3000 (the Wiring Rules), and other normative technical standards it references including AS/NZS 60079.14 (Explosive atmospheres Design selection, erection and initial inspection).

This includes gasfitting and electrical installation work in a hazardous area, which is defined 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.* [3]

A non-hazardous area (on account of explosive gas atmospheres) is defined 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.* [4]

Hazardous area classification

As is 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[5] .

AS/NZS 60079.10.1 and AS/NZS 60079.14 establish 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. … the measures or 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.[6]

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[7].

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.

In that context, AS/NZS 60079.10.1 addresses use of industry codes and national standards[9], 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'*

and refers to Annex K for examples of relevant codes, where table K.1 identifies the Australia and New Zealand reference AS/NZS (IEC) 60079.10.1 with its application to include the 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'[10]. The contents of Appendix E include classification examples for Flammable Gasses – Gas industry Codes (Standards), and addresses Consumer Installations[11].

This specifically addresses domestic and commercial consumer installations, to state:

> *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.*

Consumer installations are covered by AS/NZS 5601.1, which is administered by the relevant authority.

Domestic or commercial installations (for example, hospitality, education and 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.

Note: In reference to the term 'relevant authority' above – for complex gas installations, the relevant authority is Energy Safe Victoria.

Further information

Contact Energy Safe's Technical Information Line:

- email: gastechnicalenquiry@energysafe.vic.gov.au
- phone on 1800 652 563 (option 3).

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References

[1] The Gas Safety Act 1997 and the Gas Safety (Gas Installation) Regulations 2018

[2] The Electricity Safety Act 1998, and the Electricity Safety (General) Regulations 2019

[3] Clause 1.4.15 of the Wiring Rules (AS/NZS 3000:2018)

[4] Clause 3.2.2 of AS/NZS 60079.14 (2022)

[5] 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, and a Licensed Electrical Inspector (LEI) to inspect the prescribed electrical installation work that is subsequently certified.

[6] Clause 4.2 of AS/NZS 60079.10.1 (2022)

[7] Clause 4.1 of AS/NZS 60079.14 (2022)

[8] Clause 3.1.1 of AS/NZS 60079.14 (2022)

[9] Clause 5.3.2 of AS/NZS 60079.10.1 (2022)

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

[11] Appendix E.1.2 of the Supplement

Who we are

At Energy Safe Victoria we work to keep Victoria energy safe.

We regulate the energy industry and sector to ensure generation, supply and usage uphold safety standards, and engage with the community to raise awareness of energy safety risks.

In everything we do, we strive to deliver on our purpose to keep Victoria energy safe. Always.

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