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General-purpose natural gas and natural gas equivalents



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- Australian Energy Council
- Australian Energy Market Operator
- Australian Industry Group
- Australian Pipelines and Gas Association
- Bioenergy Australia
- Energy Networks Australia
- Gas Appliance Manufacturers Association of Australia
- Gas Energy Australia
- Gas Technical Regulators Committee

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Preface

This Standard was prepared by the Standards Australia Committee AG-010, Natural Gas Quality Specifications, to supersede AS 4564:2020, *General-purpose natural gas*.

The objective of this document is to outline the requirements for natural gas suitable for both transportation and general-purpose use, and provides the range of gas properties consistent with safe operation of natural gas appliances.

It specifies general-purpose natural gas with an emphasis on the safety of the gas for use in natural gas appliances and equipment, and for use as fuel in natural gas vehicles.

The major changes in this edition are as follows:

(a) Clarification of natural gas and natural gas equivalents.

(b) Specification of compositional requirements related to biomethane.

(c) Addition of an informative appendix with guidance on assessing risk for different biogas sources.

The terms “normative” and “informative” have been used in this document 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.

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How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

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General-purpose natural gas and natural gas equivalents

1 Scope

This document sets out the requirements for natural gas suitable for both transportation and general-purpose use, and provides the range of gas properties consistent with safe operation of natural gas appliances.

It specifies general-purpose natural gas and natural gas equivalents with an emphasis on the safety of the gas for use in natural gas appliances and equipment, and for use as fuel in natural gas vehicles. It aims to provide certainty for appliance manufacturers who supply the Australian market.

NOTE 1 Natural gas equivalents may include natural gas, biomethane, synthetic methane and blends of hydrogen and other gases that conforms with this document.

NOTE 2 General-purpose natural gas may come from multiple sources and may be formed by blending gas from different supplies.

General-purpose natural gas and natural gas equivalents may also be subject to legislative requirements relating to quality, and to contractual requirements and variations. Such variations are not within the scope of this document.

NOTE 3 Further information and guidance on gas properties, additional issues to be considered in contracts, and test methods used to verify conformance are provided in the Appendices.

This document provides conformance specification for general-purpose natural gas and natural gas equivalents. This specification may not be fit for purpose for specific applications such as a process feedstock or for a dedicated supply to an industrial user. This document does provide a risk-based approach to enable limited variations to the means of conformance where a robust risk assessment has been undertaken to ensure that any variation to the means of conformance specification does not affect the safety, integrity, reliability or sustainability of any downstream infrastructure or appliances.

While natural gas conforming to this document is suitable for transportation through pipelines, it should be noted that fast-tearing fracture control required by AS 2885.1 is dependent on gas composition. For the purposes of this document, pipeline fracture has not been considered in determining the gas composition limits.

While natural gas conforming to this document is suitable for consumption in natural gas vehicles, there are risks associated with compressing and storing of gas mixtures containing hydrogen at high pressures. This document has not taken CNG refuelling and storage container integrity into consideration in determining the gas composition limits.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents for informative purposes are listed in the Bibliography.

AS/NZS 2885.1, *Pipelines—Gas and liquid petroleum, Part 1: Design and construction*

AS 2885.3, *Pipelines — Gas and liquid petroleum, Part 3: Operation and maintenance*

AS 3645, *Essential requirements for gas equipment*

AS 3814, *Industrial and commercial gas-fired appliances*

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