AS 2885.1—2007
(Incorporating Amendment No. 1)

Australian Standard®

Pipelines—Gas and liquid petroleum

Part 1: Design and construction

This Australian Standard® was prepared by Committee ME-038, Petroleum Pipelines. It was approved on behalf of the Council of Standards Australia on 19 January 2007.
This Standard was published on 25 May 2007.

The following are represented on Committee ME-038:

- APIA Research and Standards Committee
- Australasian Corrosion Association
- Australian Chamber of Commerce and Industry
- Australian Institute of Petroleum
- Australian Pipeline Industry Association
- Bureau of Steel Manufacturers of Australia
- Department of Consumer and Employment Protection (WA)
- Department of Energy, Utilities and Sustainability (NSW)
- Department of Mines and Energy (Qld)
- Department of Primary Industries (Victoria)
- Department of Primary Industry, Fisheries and Mines (NT)
- Energy Networks Association
- Gas Association of New Zealand
- Primary Industries and Resources SA
- Welding Technology Institute of Australia

This Standard was issued in draft form for comment as DR 04561.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Pipelines—Gas and liquid petroleum

Part 1: Design and construction

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-038, Petroleum Pipelines, to supersede AS 2885—1997, *Pipeline—Gas and liquid petroleum.*

This Standard incorporates Amendment No. 1 (February 2009). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide requirements for the design and construction of steel pipelines and associated piping and components that are used to transmit single phase and multi-phase hydrocarbon fluids.

This standard provides guidelines for use of pipe manufactured from certain non steel or corrosion-resistant materials.

This Standard is part of a series, that covers high pressure petroleum pipelines, as follows:

	AS	
	2885	Pipelines—Gas and liquid petroleum
A1	2885.0	Part 0: General requirements
	2885.1	Part 1: Design and construction (this Standard)
	2885.2	Part 2: Welding
	2885.3	Part 3: Operation and maintenance
	2885.4	Part 4: Submarine pipelines
	2885.5	Part 5: Field pressure testing
A1		**Text deleted**

A1 **‘Text deleted’**

2007 REVISION

A1 **‘Text deleted’**

The comprehensive revision of AS 2885.1 is the result of extensive work by subcommittee ME-038-1 in response to a request from the industry that it consider increasing the design factor from 0.72 to 0.80. This request prompted a detailed review of each section and each clause of the Standard, resulting in the preparation of some 70 ‘issue papers’ that considered the underlying technical issues (in relation to an increased design factor) and recommended changes to the Standard. These issue papers were debated within the

subcommittee and published on the Industry web site to allow consideration by the Industry. The results of these deliberations form the basis of this revision. The revision also reflects the results of a significant and ongoing industry-funded research program undertaken by the Australian Pipeline Industry Association and its research contractors, and through its association with the Pipeline Research Council International and the European Pipeline Research Group.

This revision provides a basis for Industry to benefit through the application of an increased factor for pressure design (for new pipelines) and a structured basis for increasing the MAOP of a qualifying existing pipeline. These benefits are supported by robust requirements for safety, structural design, construction, testing and record keeping.

Significant changes in this Revision include the following:

(a) A restructure of the sections of the document to separate pipeline general, pipeline, stations, and instrumentation and control.

(b) The incorporation of a section defining the minimum requirements for a pipeline whose maximum allowable operating pressure is proposed to be raised.

(c) Section 2 (Safety) has been rewritten, to reflect experience gained in the seven years since it was revised to provide a mandatory requirement for risk assessment. This revision provides more explicit guidance on the obligation to undertake safety assessments with the integrity required for compliance with this Standard. Material is provided in normative and informative appendices.

(d) Section 3 (Materials and components) has been revised to better address the treatment of materials used in pipelines. It includes a requirement to de-rate the specified minimum yield stress of pipe designed for operation at temperatures of 65°C and higher. The use of fibreglass and corrosion-resistant alloy pipe materials for pipelines constructed to this Standard is permitted and limited in this Section. A minimum toughness requirement for pipe DN 100 and larger has been introduced.

(e) Section 4 (Pipeline general) contains most of the material in the ‘Pipeline general’ section of the 1997 revision. The Section has been expanded to include the following:

  (i) A mandatory requirement for the design of a pipeline for the existing and intended land use.

  (ii) A revision of the requirements for effective pipeline marking including a change to require the marker sign to comply with a ‘danger sign’ in accordance with AS 1319, *Safety signs for the occupational environment*.

  (iii) A plan for isolation of a pipeline.

  (iv) Special requirements for pipelines constructed in locations where the consequence of failure by rupture is not acceptable. Provisions for compliance with these requirements for pipelines constructed to this, or to an earlier revision of the Standard, in land where the location classification has changed to residential (or equal) is included.

  (v) The location classification definitions are revised and additional sub-classes are defined.

  (vi) The hydrostatic strength test pressure is redefined to address the situation where the pipe wall thickness exceeds the pressure design thickness, including corrosion allowance.

  (vii) Provisions for low-temperature excursions.

  (viii) Calculation methods for critical defect length, energy release rate and radiation contour.