AS 2885.2—2007

Australian Standard®

Pipelines—Gas and liquid petroleum

Part 2: Welding

This Australian Standard® was prepared by Committee ME-038, Petroleum Pipelines. It was approved on behalf of the Council of Standards Australia on 27 November 2006.
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The following are represented on Committee ME-038:

- Australian Corrosion Association
- Australian Gas Association
- Australian Institute of Petroleum
- Australian Petroleum Production and Exploration Association
- Australian Pipeline Industry Association
- Bureau of Steel Manufacturers of Australia
- Cooperative Research Centre for Welded Structures
- Department of Labour New Zealand Check
- Department of Minerals and Energy WA
- Department of Mines and Energy (Qld.)
- Department of Mines and Energy (N.T.)
- Department of Natural Resources and Environment (Vic.)
- Gas Association of New Zealand
- Ministry of Energy and Utilities N.S.W.
- Primary Industries and Resources S.A.
- Welding Technology Institute of Australia (WTIA)

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Australian Standard®

Pipelines—Gas and liquid petroleum

Part 2: Welding

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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 2885.2—2002.

The objective of this Standard is to provide requirements for the welding of pipeline designed and constructed in accordance with AS 2885.1.

The objective of this revision is to include editorial changes, and technical changes, which became necessary as a result of experience in the use of the Standard in the four years since the previous edition was issued. The most important changes that have been made are the following:

(a) Material has been included defining the information that needs to be submitted in order that other welding processes that may be submitted for inclusion in the Standard may be considered.

(b) Changes have been made to the application clause to clarify where the Standard is intended to be applied.

(c) The methods and the requirements for qualifying welding procedures have been clarified.

(d) A requirement for fracture toughness testing has been reintroduced for welds made to the requirements of Tier 1 where the welds are not made entirely with E4110 electrodes. (This requirement was inadvertently omitted from the 2002 edition.)

(e) Important changes, corrections, and clarifications have been made to the essential variables.

(f) The notched tensile test used in the previous Standard to determine whether overmatching is achieved has been deleted pending the performance of further research.

(g) The acceptance criteria for the macro test have been clarified.

(h) Changes have been made to the permissible limit and method of qualifying the limit of high-low.

(i) Changes have been made to the methods used for non-destructive examination and to the method of interpreting and sentencing the depth of gas pores.

(j) The previously accepted convention that root slag intrusions be sentenced as undercut has been reintroduced after being inadvertently lost.

The above list of changes is not intended to be complete. Users of the Standard should not rely upon the list in order to ascertain whether there have been changes made to the previous version of the Standard.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

CONTENTS

Page

STANDARDS AUSTRALIA

Australian Standard
Pipelines—Gas and liquid petroleum

Part 2: Welding

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the minimum requirements for materials, welding consumables, welding processes, weld preparations, qualifications of welding procedures and personnel, and fabrication and inspection requirements for the construction and maintenance welding of carbon and carbon-manganese steel pipelines down to 3.2 mm wall thickness designed and constructed in accordance with AS 2885.1. The welding of corrosion-resistant alloy steel pipelines, or pipelines with wall thickness less than 3.2 mm, is not precluded but is not expressly covered by this Standard. The welding of such pipelines is to be given special consideration.

The welding may be done by a manual metal arc, submerged arc, gas tungsten arc, gas metal arc, flux cored arc, oxyacetylene, or by a combination of these using a manual, semi-automatic, or automatic welding technique or a combination of these techniques. The welds may be produced by position or roll welding or by a combination of position and roll welding.

Other processes may be submitted for inclusion in the Standard upon provision of the following information:

(a) A description of the welding process.

(b) A proposal on the essential variables.

(c) A typical welding procedure qualification record and a welding procedure specification.

(d) Weld inspection methods.

(e) Types of weld discontinuities and their proposed acceptance limits.

(f) Repair procedures.

This Standard is applicable to the welding of joints in or on pipelines, and the field welding of pipeline assemblies. This Standard may be applied to the factory fabrication of pipeline assemblies manufactured from pipes and fittings. See Figure 1.1 for examples.

NOTE The welding of fittings may present special difficulties when using typical pipeline welding procedures (see Appendix E).