

Australian/New Zealand Standard™

Pipelines—Gas and liquid petroleum

Part 5: Field pressure testing

AS/NZS 2885.5:2002

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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
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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 1978—1987, Pipelines—Gas and Liquid Petroleum—Field pressure testing.

The objective of this Standard is to set out methods for the determination of the strength and the leak-tightness of a pipeline test section.

Major changes in this edition are the replacement of the interpretation of pressure/volume/temperature graphs with a more rigorous and accurate mathematical method, the inclusion of data for the interpretation of tests using petroleum fuels as the testing medium and a mandatory procedure for determining whether a leak test has been successful.

The terms ‘normative’ and ‘informative’ have been used in this Standard 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.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 BASIS OF SECTION	5
1.2 APPLICATION	5
1.3 PURPOSE OF TESTS	5
1.4 DESIGNATION OF TEST METHODS	6
1.5 REFERENCED DOCUMENTS.....	6
1.6 DEFINITIONS.....	6
1.7 TESTING PERSONNEL	8
1.8 NOTATION.....	8
1.9 CONVERSION TO SI UNITS.....	8
1.10 ROUNDING OF NUMBERS	8
SECTION 2 EQUIPMENT AND TEST LIQUID	
2.1 BASIS OF SECTION	9
2.2 ACCURACY, SENSITIVITY, AND REPEATABILITY OF EQUIPMENT.....	9
2.3 COMMUNICATIONS AND TRANSPORT.....	11
2.4 INSTALLATION AND LOCATION OF TEST EQUIPMENT	11
2.5 TEST LIQUID	12
2.6 PROCEDURES AND PRECAUTIONS WHERE TEST FLUID IS PETROLEUM LIQUID	12
SECTION 3 PREPARATION FOR TESTS	
3.1 BASIS OF SECTION	13
3.2 SELECTION AND DESIGN OF TEST SECTIONS	13
3.3 TEST PROGRAM	13
3.4 TEST SECTION	14
3.5 SITE WORK.....	15
SECTION 4 PRESSURE TESTING	
4.1 BASIS OF SECTION	16
4.2 FILLING.....	16
4.3 PRESSURIZATION	16
4.4 PRESSURE-CONTROLLED TEST	17
4.5 VOLUME/STRAIN-CONTROLLED TEST.....	18
4.6 TEST PRESSURES	19
4.7 HOLD PERIOD	20
SECTION 5 ASSESSMENT OF STRENGTH AND LEAK TESTS	
5.1 BASIS OF SECTION	23
5.2 STRENGTH TEST	23
5.3 LEAK TEST	23
SECTION 6 REINSTATEMENT OF THE TEST SECTION	
6.1 BASIS OF SECTION	26
6.2 REINSTATEMENT.....	26

SECTION 7 REPORTS AND RECORDS

7.1	BASIS OF SECTION	27
7.2	REPORTING REQUIREMENTS	27
7.3	REPORTS.....	27
7.4	RECORDS.....	28

APPENDICES

A	BASIS OF THE STANDARD	29
B	PRESSURE/VOLUME/TEMPERATURE RELATIONSHIPS IN PIPELINE TEST SECTIONS	41
C	HYPOTHETICAL TEST SECTION.....	48
D	SELECTION OF END-POINTS	53
E	INVESTIGATION OF A PREMATURE END-POINT	59
F	MEASUREMENT OF RESIDUAL AIR.....	64
G	ESTIMATION OF POTENTIAL GAS LEAKAGE RATE.....	69
H	TYPICAL REPORT FORM	79
I	SELECTION AND DESIGN OF TEST SECTIONS	80
J	ADIABATIC TEMPERATURE CHANGES IN TEST SECTIONS	82

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 BASIS OF SECTION

This Standard sets out methods for the hydrostatic testing of petroleum pipelines, which are a mandatory requirement of AS 2885.1 and AS 2885.3. It may also be used for testing other pipelines including pipelines designed to, or operated to, AS 1697.

Hydrostatic testing of a pipeline is usually carried out by testing a number of isolated test sections.

Hydrostatic testing is used to establish—

- (a) the strength and leak tightness of a test section; and
- (b) the pressure strength of a pipeline for the purposes of determining or confirming the maximum allowable operating pressure of the pipeline.

NOTE: For information on the history and basis of the Standard, see Appendix A.

1.2 APPLICATION

This Standard is applicable to steel pipelines that comply with AS 2885.1, AS 2885.3 and AS 1697. It may also be applicable to high pressure steel pipelines designed and constructed to national Standards of other countries. This Standard may be applied for pretesting of pipe and components and for testing sections of pipe separate from the field test (see Clause 4.3.2).

1.3 PURPOSE OF TESTS

1.3.1 Strength test

The purpose of the strength test is to establish that a pipeline is capable of withstanding the pressure for which it is designed.

The test may also be used to—

- (a) measure certain mechanical properties of the test section or to relieve or reduce residual stress in the test section; and
- (b) determine the maximum allowable operating pressure (MAOP) of a pipeline.

1.3.2 Leak test

The purpose of the leak test is to establish that a pipeline complies with the required leak-tightness (see Clauses 1.6.7 and 4.7.2).