

Title	Perform hydrostatic tests on gas mains and services		
Level	5	Credits	10

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of company procedures, documentation, hazards, equipment, and fittings for hydrostatic tests on gas mains and services; – prepare a hydrostatic test plan; – prepare for hydrostatic testing on gas mains and services; – carry out a hydrostatic testing pressure test; and – complete reporting and documentation procedures.
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Classification	Gas Industry > Gas Network Construction
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer specifications, company procedures, and legislative requirements.
- 2 Legislation, standards, and guidelines relevant to this unit standard include:
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - AS/NZS 4645.1: 2018 *Gas distribution networks – Part 1: Network management*;
 - AS/NZS 4645.2: 2018 *Gas distribution networks – Part 2: Steel pipe systems*;
 - AS/NZS 4645.3: 2018 *Gas distribution networks – Part 3: Plastic pipe systems*;
 - AS 2885.1: 2018 *Pipelines – Gas and liquid petroleum Design and Construction*;
 - AS 2885.3: 2022 *Pipelines – Gas and liquid petroleum, Part 3: Operation and Maintenance*; available from www.standards.org.au;
 - *Excavation Safety: Good Practice Guidelines, July 2016*; available from www.worksafe.govt.nz.
- 3 **Assessment**
It is recommended people achieve Unit 32339, *Internally clean a gas pipe in a gas network*, or demonstrate equivalent knowledge and skills before being assessed against this unit standard.
- 4 **Definition**
Company procedures refer to the documented methods for performing work activities, and include health and safety, operational, environmental, and quality management requirements. They may refer to legislation, regulations, guidelines, standard operating procedures, manuals, codes of practice, or policy statements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of company procedures, documentation, hazards, equipment, and fittings for hydrostatic tests on gas mains and services.

Performance criteria

- 1.1 Documentation and company procedures for hydrostatic testing are interpreted and described in terms of purpose.
- Range may include – network technical standard, standard operating procedure, safe work procedure, work instruction, job hazard analysis, environmental plan; evidence of three items of documentation is required.
- 1.2 Job documentation and instructions are confirmed for accuracy.
- Range as-built drawings, waste disposal instructions, test certificates.
- 1.3 Potential environmental and safety hazards are described in terms of their controls.
- Range work in excavations, other utilities, stored energy, uncontrolled release of test water, traffic, public.
- 1.4 Hydrostatic testing is described.
- Range test objectives, test methods, test pressure, test lengths, test procedure.
- 1.5 Hydrostatic testing equipment, components and materials are described in terms of their function.
- Range pigs, pig trap, pig catcher, test pump, test manifold, calibrated test gauge, drying medium, test water.
- 1.6 Factors that affect hydrostatic test results are described in terms of impact and controls.
- Range elevation, temperature.

Outcome 2

Prepare a hydrostatic test plan.

Performance criteria

- 2.1 A hydrostatic test plan is prepared for review and approval.

Outcome 3

Prepare for hydrostatic testing on gas mains and services.

Performance criteria

- 3.1 Safety and environmental risks are identified and controlled.
- 3.2 Hydrostatic test equipment is prepared, positioned, and connected.
- 3.3 Preparation ensures that pipe work to be tested and test fittings meet specifications and are anchored in position.
- 3.4 Air vents and drainage points are positioned.
- 3.5 Test water supply is connected and made ready for the test.

Outcome 4

Carry out a hydrostatic testing pressure test.

Performance criteria

- 4.1 Hydrostatic test water is injected to the pipe work in accordance with the hydrostatic test plan.
- 4.2 Hydrostatic test pressure is raised, and pressure level and security of pipe work and test equipment are monitored.
- 4.3 Test equipment is checked for leaks in accordance with the hydrostatic test plan.
- 4.4 Stabilisation period is timed in accordance with the hydrostatic test plan.
- 4.5 Pressure test readings are obtained in accordance with the hydrostatic test plan.
- 4.6 Test period is applied, and test readings are recorded.
- 4.7 Where test results show a pressure loss, leaks are traced and repaired, and retesting is completed.
- 4.8 Pipe is depressurised on test completion in a controlled manner and test equipment is disconnected.
- 4.9 Test water is disposed of.
- 4.10 Pipe is internally cleaned and dried and made ready for commissioning in accordance with industry standards.

Outcome 5

Complete reporting and documentation procedures.

Performance criteria

5.1 Recording and documentation procedures are completed, and information is communicated to internal and external parties as required.

Range may include – job card, test results, consents, special conditions, completion notice, additional work; evidence of three procedures is required.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 June 1997	31 December 2018
Revision	2	3 August 2000	31 December 2018
Review	3	22 October 2002	31 December 2018
Review	4	20 November 2006	31 December 2018
Review	5	21 May 2010	31 December 2020
Review	6	17 August 2017	31 December 2025
Revision	7	30 August 2018	31 December 2025
Review	8	24 November 2022	N/A

Consent and Moderation Requirements (CMR) reference	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangara Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@WaihangaraAraRau.nz if you wish to suggest changes to the content of this unit standard.