Title	**Fit mechanical couplings in a gas network**		
Level	**3**	**Credits**	**4**

Purpose	People credited with this unit standard are able to, in a gas network: demonstrate knowledge of procedures, documentation, and equipment for fitting mechanical couplings; fit mechanical couplings; and complete reporting and documentation.

Classification	Gas Industry > Gas Network Construction

Available grade	Achieved

Guidance Information

1 This unit standard is intended for, but is not limited to, workplace assessment. The range statements relate to enterprise specific equipment, procedures, and processes.

2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, company procedures and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of:
Health and Safety at Work Act 2015;
AS/NZS 4645.1:2018 *Gas distribution networks – Network management*;
AS/NZS 4645.2:2018 *Gas distribution networks – Steel pipe systems*;
AS/NZS 4645.3:2018 *Gas distribution networks – Plastic pipe systems*;
AS/NZS 2885.1-2018 *Pipelines - Gas and liquid petroleum Design and construction*;
AS 2885.3-2012 *Pipelines - Gas and liquid petroleum Operation and maintenance*;
Excavation Safety good practice guidelines ISBN 978-0-908336-49-4 (online);
and any subsequent amendments and replacements.

4 References
Australian standards (AS) may be found at www.standards.org.au;
Australian/New Zealand standards (AS/NZS) may be found at www.standards.govt.nz.

5 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

6 Definitions
Company procedures mean 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.
Mechanical coupling means a compression-type coupling used for joining pipe. It may include a sealing ring and insert.

7 Assessment against this unit standard may take place under real or practical simulated conditions. Assessment must include at least two types of fittings.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of procedures, documentation, and equipment for fitting mechanical couplings in a gas network.

Performance criteria

1.1 Documentation and company procedures for fitting mechanical couplings are located and interpreted in relation to specified job requirements.

1.2 Job instructions are confirmed.

Range instructions may include – site location, utility plans, mark-outs, consents, easements.

1.3 Potential environmental and safety hazards are identified and controlled.

Range hazards may include – uncontrolled gas escape, excavations, potential energy release, confined working, static electricity, traffic, general public;
evidence of four hazards is required;
controls may include – signage, barriers, personal protective equipment, safe access and egress, temporary traffic control, gas detection, continuity bond, anchoring;
evidence of four different controls is required.

1.4 Types and component parts of mechanical couplings and ancillary equipment and materials are described.

Range types include – bolted compression fittings, screwed compression fittings, crimp fittings;
types may include – pipe expansion joint, flanges;
components may include – inserts, gaskets, wrapping, fitting tools, sealing rings, washers, locking rings, stud bolts.

1.5 Potential faults associated with the incorrect fitting of mechanical couplings, and the steps to avoid them are described.

Range faults may include – misalignment, pipe expansion or contraction, incorrect pressure rating, incorrect size range, poor strength, inadequate flexibility, contamination, incorrect tool use, tightening sequence, torque, distortion.

1.6 Resource requirements are identified and sourced.

Range may include – fittings, tools, materials, documentation, personnel, personal protective equipment.

Outcome 2

Fit mechanical couplings in a gas network.

Performance criteria

2.1 Couplings and associated fittings are prepared.

2.2 Fitting is selected according to function and application.

Range may include – pipe size and type, pipe pressure, temperature changes, fitting rating, flexibility requirements, expansion, contraction.

2.3 Coupling is fitted.

2.4 Coupling is tested for leakage and strength.

Outcome 3

Complete reporting and documentation.

Performance criteria

3.1 Information is communicated to internal and external parties.

Range may include – special conditions, completion notice, additional work.

3.2 Records and documents are completed and processed.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 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 2021
Revision	7	30 August 2018	31 December 2021
Review	8	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.