

Title	Perform electrofusion jointing on polyethylene pipe for a network		
Level	4	Credits	6

Purpose	People credited with this unit standard are able to demonstrate knowledge of documentation, company procedures, hazards and equipment for electrofusion jointing; and, prepare for and perform electrofusion jointing.
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Classification	Plastics Processing Technology > Plastics Fabrication
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Available grade	Achieved
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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 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;
Resource Management Act 1991;
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 – Plastics pipe systems*;
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 Definition
Company requirements refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications and legislative requirements.

- 6 This unit standard is intended for people who work with fusion welding plastic piping to transport either gas or water as described in AS/NZS 4130:2018: *Polyethylene (PE) pipes for pressure applications*.
- 7 It is recommended that people intending to gain credit for this unit standard first hold credit for Unit 25610, *Demonstrate knowledge of polyethylene pipe, fittings and fusion jointing for a gas network*.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of documentation, company procedures, hazards and equipment for electrofusion jointing.

Performance criteria

- 1.1 Documentation and company procedures for electrofusion jointing are located and interpreted.
- Range may include – network standard, equipment operating manuals, standard operating procedure, safe work procedure, work instruction, job hazard analysis, job risk assessment.
- 1.2 Documentation and instructions for a specified job is obtained.
- Range may include – site location, pipe specifications, fittings, manual or automatic fusion unit, hazard identification.
- 1.3 Potential environmental and safety hazards and controls are described.
- Range hazards may include – weather, electric shock, excavations, manual handling, personal injury, vehicles and public; controls may include – personal protective equipment, safe access and egress, weather protection, earthing, lifting and handling techniques, temporary traffic control, signage, barriers.
- 1.4 Electrofusion jointing equipment, components and their purpose are described.
- Range leads, fusion unit, clamps, power source, residual current device, cutters, scrapers, rotary surface peeling tool, cleaning agents, earth pin.
- 1.5 Potential faults associated with incorrect application and operation of equipment, and the steps to avoid them are described.

Outcome 2

Prepare for electrofusion jointing.

Range saddle fitting, socket type fitting.

Performance criteria

2.1 Safety and environmental hazards are identified and controlled.

Range hazards may include – weather, electric shock, excavations, manual handling, personal injury, vehicles and public; controls may include– signage, barriers, personal protective equipment, safe access and egress, weather protection, earthing, lifting and handling techniques, temporary traffic control.

2.2 Electrofusion jointing equipment and materials are prepared, handled, and positioned.

Range may include – leads, fusion unit, clamps, power source, residual current device, cutters, scrapers, rotary surface peeling tool, cleaning agents, pipe, fittings, earth pin.

2.3 Pipe and fittings are quality checked.

Range pipe size, standard dimension ratio, pipe surface damage, ovality, pipe end reversion, pressure rating, fitting package damage, fitting damage.

2.4 Pipe and fittings are prepared for electrofusion jointing.

Range may include – cut square, stab depth marked, cut to length, dry, free from oxidisation, contaminant-free, cleaning agent, weather protection, pipe end alignment, clamped.

2.5 Fusion unit is set up.

Range fusion time, voltage level, verification of settings.

Outcome 3

Perform electrofusion jointing.

Range saddle fitting, socket type fitting.

Performance criteria

3.1 Joints are made by electrofusion jointing.

3.2 The cooling period is adhered to before handling and pressurising joint.

3.3 A check is carried out to ensure the integrity of the pipe joint.

Range check may include – visual assessment, on site pressure check, destructive test, leak test, physical inspection.

3.4 Identification is assigned to the weld and recorded.

Range may include – weld number, date, weld machine data print out.

Planned review date	31 December 2025
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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	20 November 2009	31 December 2020
Review	6	20 October 2016	31 December 2023
Revision	7	30 August 2018	31 December 2023
Review	8	27 May 2021	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 MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.