Title	**Carry out butt fusion jointing on polyethylene pipes for water networks**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to prepare to carry out and carry out butt fusion jointing for water networks.

Classification	Water Industry > Water Reticulation

Available grade	Achieved

Prerequisites	Unit 31532 - *Demonstrate knowledge of fusion jointing of polyethylene pipes for water networks*; or demonstrate equivalent knowledge and skills.

Guidance Information

1 Legislation and references relevant to this unit standard include but are not limited to:
Health and Safety at Work Act 2015; and any subsequent amendments and replacements;
ISO 13953, *Polyethylene (PE) pipes and fittings — Determination of the tensile strength and failure mode of test pieces from a butt-fused joint,* available from https://shop.standards.govt.nz/catalog/ics/;
DIN-DVS 2203 – 5 *Testing of welded joints of thermoplastics plates and tubes – Technological bend test* is available at https://standards.globalspec.com/.

2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable company and legislative requirements.

3 Definitions
Company requirements include the policy, procedures, and methodologies of the company. They include legislative and regulatory requirements applicable to the company or a specific site. Requirements are documented in the company's health and safety plans, traffic management plans, contract work programmes, quality assurance programmes, policies, and procedural documents.
Contract specifications include plans, diagrams, and special technical conditions. They do not include special administrative conditions.

Outcomes and performance criteria

Outcome 1

Prepare to carry out butt fusion jointing for water networks.

Performance criteria

1.1 Job instructions are obtained, and job details including type and size of pipe, and fusion procedures are confirmed.

1.2 Equipment, components, pipes, fittings, and materials are selected, and checked. Action is taken to rectify any damage or non-conformance.

Range checks may include – pipe type, pipe outside diameter, PN class, standard dimension ratio, surface damage, ovality, pipe end reversion.

1.3 Site conditions are checked and confirmed as suitable for butt fusion jointing.

1.4 Site management and communication requirements are determined and confirmed.

1.5 Equipment and components are prepared and positioned.

Outcome 2

Carry out butt fusion jointing for water networks

Range evidence of three butt fusion joints is required.

Performance criteria

2.1 Fusion parameters are determined.

Range parameters may include - heater plate temperature, pressure and time for bead up, soak time, change over time, pressure ramp time, fusion jointing pressure, cooling time.

2.2 Butt fusion jointing is carried out for a specified pipe diameter.

2.3 Butt fusion joints are free from defects and contamination in the weld plane and tested in accordance with ISO 13953 to present a ductile rupture mode; or in accordance with DIN-DVS 2203 – 5 with no splits or cracks in the weld plane.

2.4 Quality assurance documentation and reporting is completed.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	29 November 2018	N/A

Consent and Moderation Requirements (CMR) reference	0101

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

Comments on this unit standard

Please contact Connexis Infrastructure ITO qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.