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| **Title** | **Weld steel pipe using the oxyacetylene welding process** | | |
| **Level** | **4** | **Credits** | **12** |

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| **Purpose** | This unit standard is for people welding steel pipe using the oxyacetylene welding (OAW) process.<br><br>People credited with this unit standard are able to: prepare to weld steel pipe using the OAW process; weld steel pipe using the OAW process; and inspect and repair pipe welds. |

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| **Classification** | Mechanical Engineering > Welding |

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| **Available grade** | Achieved |

**Guidance Information**

1 Legislation and references
Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
Health and Safety at Work Act 2015.
WorkSafe Good Practice Guide “Health and Safety in Welding.” Available at: https://www.worksafe.govt.nz/assets/dmsassets/WKS-13-Welding-GPG.pdf.
Weld Australia (formerly Welding Technology Institute of Australia (WTIA) Technical Note 7 – Health and Safety in Welding. Available at: Product Details Weld Australia Member Portal.

Welder qualification Standard -, AS/NZS ISO 9606.1:2017, *Qualification testing of welders - Fusion welding - Part 1: Steels,* or equivalent. Available at: www.standards.govt.nz.
ISO 6947:2019, *Welding and allied processes - Welding positions.* Available at: www.standards.govt.nz.

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.

2 Definitions
*Accepted industry practice* – approved codes of practice and standardised procedures accepted by the engineering industry as examples of best practice.
*OAW* – Oxyacetylene Welding, also referred to as G*as Welding*.
*Industry standard* – AS/NZS ISO 9606.1:2017, or equivalent.

*Manufacturer's instructions* – instructions provided by manufacturers of substances, equipment, and machinery. These instructions may include details on safe and correct handling, use and storage of substances and/or details on substance properties. Examples are labels on substance containers, product data sheets, and operator's manuals.
*Welding procedure specification (WPS)* – written specification providing all the necessary technical details for a specific welding application meeting the requirements of the appropriate industry standard.
*Workplace procedures* – organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the industry sector.

3 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with legislative requirements and workplace procedures, and meet accepted industry practice. This includes but is not limited to the knowledge, use and maintenance of relevant tools and equipment.

4 Recommended skills and knowledge
It is recommended that people seeking credit for this unit standard first hold credit for Unit 2678, *Join steel using the oxyacetylene welding process*, or equivalent skills and knowledge.

## Outcomes and performance criteria

### Outcome 1

Prepare to weld steel pipe using the OAW process.

### Performance criteria

1.1 Equipment is selected to meet WPS requirements.

Range cylinders, regulators, flashback arrestors, hoses, torch, tip.

1.2 Equipment is assembled, set up, and maintained ready for use in accordance with manufacturer's instructions.

Range maintenance – tip cleaning, checking for leaks, hose repair, reporting defective equipment.

1.3 Pipe is prepared and assembled for joining in accordance with WPS.

Range cleaning, edge preparation, tack welding to correct alignment.

1.4 Consumables are selected in accordance with the WPS.

**Outcome 2**

Weld steel pipe using the OAW process.

Range 4 welds;
50 mm diameter steel pipe, 3.6 mm wall thickness in the 2G, 5G, and 6G positions (ISO 6947 PC, PH, H-L045);
right angle set-on branch of 50 mm to 32 mm diameter pipe.

**Performance criteria**

2.1 Workplace safety procedures are followed.

Range examples are – use of personal protective equipment, checking of equipment for faults, use of fume extraction equipment, visible light and infrared radiation, elimination of risk of fire or explosion.

2.2 Pipe joints are welded to industry standard and in accordance with WPS.

2.3 Welds are cleaned in accordance with accepted industry practice.

**Outcome 3**

Inspect and repair pipe welds.

**Performance criteria**

3.1 Weld imperfections are identified by visual examination and bend tests.

Range visual examination for each branch weld from Outcome 2 is required;
bend test for each butt weld from Outcome 2 is required.

3.2 Weld imperfections are evaluated using acceptance levels in industry standard.

3.3 Weld defects are repaired in accordance with WPS and to industry standard.

Range evidence is required of at least one repair.

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| **Planned review date** | 31 December 2027 |

**Status information and last date for assessment for superseded versions**

| Process | Version | Date | Last Date for Assessment |
|---|---|---|---|
| Registration | 1 | 30 November 1994 | 31 December 2018 |
| Revision | 2 | 14 April 1997 | 31 December 2018 |
| Revision | 3 | 5 January 1999 | 31 December 2018 |
| Review | 4 | 4 April 2001 | 31 December 2018 |
| Rollover and Revision | 5 | 20 April 2006 | 31 December 2018 |
| Review | 6 | 22 May 2009 | 31 December 2022 |
| Review | 7 | 17 August 2017 | 31 December 2025 |
| Review | 8 | 26 January 2023 | N/A |

| Consent and Moderation Requirements (CMR) reference | 0013 |
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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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.