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| Title | Join steel using the oxyacetylene welding process | | |
| Level | 3 | Credits | 3 |

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| Purpose | <p>This unit standard is for people fusion-welding steel using oxyacetylene welding equipment.</p> <p>People credited with this unit standard are able to: prepare to weld using the OAW process; join steel using the OAW process; and inspect and repair OAW steel welds.</p> |
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| Classification | Mechanical Engineering > Welding |
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| Available grade | Achieved |
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| Prerequisites | Unit 33135, <i>Demonstrate knowledge of safety and health while welding and thermal cutting</i> , or demonstrate equivalent knowledge and skills. |
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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](#).

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.

- 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 *Gas Welding*.
Steel – weldable low-carbon unalloyed (carbon-manganese) steel, also known as *mild steel*.

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 – a work instruction providing all the necessary technical details for a specific welding application.

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.

Outcomes and performance criteria

Outcome 1

Prepare to weld using the OAW process.

Performance criteria

- 1.1 Equipment is selected to meet welding requirements in accordance with accepted industry practice.
- 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 tip cleaning, checking for leaks, hose repair, reporting defective equipment.
- 1.3 Steel is prepared and assembled for joining in accordance with welding procedure.
- Range cleaning, edge preparation, tack welding to correct alignment.
- 1.4 Filler metal is selected to suit the parent metal and joining process.

Outcome 2

Join steel using the OAW process.

Range 4 welds;
material thickness – 1 to 2 mm:
butt welds in the flat and vertical positions;
fillet weld on a tee joint;
pipe branch joint using 25 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, elimination of risk of fire or explosion, eye protection from visible light and infrared radiation.

2.2 Steel is joined by fusion in accordance with welding procedure.

2.3 Component damage is minimised and distortion is controlled during welding and handling in accordance with accepted industry practice.

2.4 Welds are cleaned in accordance with accepted industry practice.

Outcome 3

Inspect and repair OAW steel welds.

Performance criteria

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

Range workshop tests – hammer tests on tee and butt joints; two workshop tests on welds from Outcome 2 are required.

3.2 Weld imperfections are evaluated using acceptance levels in accordance with accepted industry practice.

3.3 Weld defects are repaired in accordance with welding procedure and accepted industry practice.

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| 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 | 30 November 1994 | 31 December 2022 |
| Revision | 2 | 14 April 1997 | 31 December 2022 |
| Revision | 3 | 5 January 1999 | 31 December 2022 |
| Review | 4 | 28 October 1999 | 31 December 2022 |
| Review | 5 | 4 April 2001 | 31 December 2022 |
| Rollover and Revision | 6 | 20 April 2006 | 31 December 2022 |
| Review | 7 | 22 May 2009 | 31 December 2022 |
| Review | 8 | 20 July 2017 | 31 December 2025 |
| Review | 9 | 26 January 2023 | N/A |

Consent and Moderation Requirements (CMR) reference

0013

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.