

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

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; and join steel using the OAW process; and inspect and repair OAW welds.</p>
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Classification	Mechanical Engineering > Welding
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Available grade	Achieved
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Prerequisites	Unit 29651, <i>Demonstrate knowledge of health and safety when welding and thermal cutting</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

1 References

Health and Safety at Work Act 2015.

Health and Safety in Welding. Wellington: Department of Labour, 2006. Available from <http://www.worksafe.govt.nz>.

McClintock, Alan and Farrelly, John. *Oxyacetylene welding*. Auckland: New Zealand Welding Centre, 1997. Available from Heavy Engineering Research Association, PO Box 76134, Manukau City, Manukau 2241.

2 Definitions

Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.

OAW – Oxy-Acetylene Welding, also known as *gas welding*.

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

Welding procedure – written work instruction providing the necessary technical details for a specific welding application.

3 Related unit standards

This unit standard is one of an oxyacetylene welding set:

- Unit 2678, *Join metals using the oxyacetylene welding process* (Level 3).
- Unit 2690, *Weld steel pipe using the oxyacetylene welding process* (Level 4).

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 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.

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, protection from arc radiation.

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

Range 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.

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.

3.2 Weld imperfections are compared to permissible levels in accordance with accepted industry practice.

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

Planned review date	31 December 2022
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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	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 Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.