

Title	Join metals using the resistance welding process		
Level	3	Credits	4

Purpose	<p>This unit standard is for people joining light gauge metals using the resistance welding (RW) process.</p> <p>People credited with this unit standard are able to: prepare to weld using the RW process; join metals using the RW process; and assess and repair RW 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.

AISI 304 – stainless steel grade, widely used austenitic chromium-nickel stainless 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.

Resistance welding – includes three process variations: spot welding, projection welding, seam welding.

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 the knowledge, use and maintenance of relevant tools and equipment.

Outcomes and performance criteria

Outcome 1

Prepare to weld using the RW process.

Performance criteria

1.1 Equipment is selected and set up for RW in accordance with job requirements and welding procedure.

Range power source rating and duty cycle, electrodes, cooling system, electrode force.

1.2 Maintenance procedures are implemented for copper electrodes in accordance with manufacturer's instructions.

Outcome 2

Join metals using the RW process.

Range 6 weld test pieces;
sheet thickness – 0.8 mm-1.6 mm;
metal – carbon steel, stainless steel e.g., AISI 304 stainless steel, galvanised steel;
RW process may be any of – spot welding, projection welding, seam welding.

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 electrocution.

2.2 Metals are joined using the RW process in accordance with welding procedure.

Outcome 3

Assess and repair RW welds.

Performance criteria

3.1 Weld quality is assessed by visual examination and peel or chisel test, in accordance with accepted industry practice.

Range one test for each weld from Outcome 2 is required.

3.2 Any defective joints are rewelded in accordance with welding procedure and to accepted industry practice.

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	4 April 2001	31 December 2022
Rollover and Revision	5	20 April 2006	31 December 2022
Review	6	22 May 2009	31 December 2022
Review	7	20 July 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.