

Design and manage welded construction

Level 6

Credits 34

Purpose People credited with this unit standard are able to: plan welding operations; manage welding operations; and control weld quality.

This unit standard is aimed at people with professional engineering experience who have already achieved specialist skills in the industry.

Subfield Mechanical Engineering

Domain Welding

Status Registered

Status date 4 April 2001

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Entry information Prerequisite: a New Zealand Certificate in Engineering (or Science), or the National Diploma in Engineering (Level 6) with strands in Mechanical Engineering, Production Engineering, and an optional Practical Endorsement strand [Ref: 0534].

Accreditation Evaluation of documentation and visit by NZQA and industry.

Standard setting body (SSB) Competenz

Accreditation and Moderation Action Plan (AMAP) reference 0013

This AMAP can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.

Special notes

- 1 This unit standard is for people seeking the *International Welding Technologist* qualification from the International Institute of Welding (IIW). Details are available from the Heavy Engineering Research Association, PO Box 76 134, Manukau City.

- 2 Codes and standards relevant to this unit standard include but are not limited to:
- a AS/NZS 1554.1:2004, *Structural steel welding – Welding of steel structures*.
 - b *The 2004 ASME Boiler and Pressure Vessel Code*.
 - c ISO 15607:2003, *Specification and qualification of welding procedures for metallic materials – General rules*.
- 3 *Company procedures* refer to documented procedures for the worksite.
- 4 *Design specification* refers to client's instructions, drawings, and/or contract.

Elements and performance criteria

Element 1

Plan welding operations.

Performance criteria

- 1.1 Welding requirements are determined in accordance with contract and/or design specification.
- Range welding requirements include but are not limited to – the welding and associated capability of the fabricator (including the need for subcontracting); materials of construction; relevant standards and/or codes; joint location and design; access for welding, inspection and testing; weld quality and acceptance levels.
- 1.2 Manufacture is planned in accordance with the quality, economic and technical requirements specified by the client and/or the company.
- Range planning includes – determination of the weldability of materials, selection of processes and equipment, traceability of materials (certification, identification, storage and handling), use of jigs and fixtures, welding and assembly sequences, qualification of procedures and personnel.
- 1.3 Welding related health and safety procedures are specified for the job and are in accordance with company procedures and customer requirements.

Element 2

Manage welding operations.

Performance criteria

- 2.1 Safety practices are verified as meeting company procedures.
- 2.2 Monitoring and recording of work progress ensures costs are controlled and quality requirements are maintained in accordance with company procedures.

- 2.3 Non compliance with welding requirements is identified and remedial action taken in accordance with company procedures.

Element 3

Control weld quality.

Performance criteria

- 3.1 An explanation of welding inspection requirements is in accordance with contract and/or design specification.
- 3.2 Weld inspection is arranged or specified in accordance with contract and company quality control job requirements.
- 3.3 Corrective action specified for defective welds is consistent with a review of inspection report(s).
- 3.4 Documentation is completed in accordance with contract or company requirements.

Range inspection reports, as-built drawings, project reports.

Please note

Providers must be accredited by the Qualifications Authority, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.