

Title	Assemble and join heavy fabrication materials		
Level	4	Credits	20

Purpose	<p>This unit standard is for use in training of fabrication trades and covers assembly and joining of heavy fabrication components.</p> <p>People credited with this unit standard are able to: prepare, assemble and join heavy fabrication materials; and inspect the completed assemblies.</p>
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Classification	Mechanical Engineering > Engineering - Fabrication
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Available grade	Achieved
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Guidance information

- 1 Legislation and reference
Health and Safety at Work Act 2015.
- 2 Definitions
Industry practice – safe and sound practices generally accepted by competent trade persons within the fabrication industry.
Job specifications – instructions relevant to the safe completion of the specific task, such as technical specifications, assembly instructions, drawings, parts lists, standards, codes of practice, test and commissioning procedures, and verbal instructions.
Worksite procedures – operational procedures put in place by the candidate's employer. These include site safety procedures, equipment operating procedures, job procedures, quality assurance, and procedures for the handling and disposal of materials and waste.
- 3 Range
 - a All activities must demonstrate safe working practices.
 - b All activities must be completed independently and reported within reasonable timeframes.
 - c Materials thickness must be greater than 4mm.
 - d Materials may include – plate, heavy structural sections, angles, channels, pipes, and tubes.
 - e Joining methods may include all types of fastenings such as bolts and nuts, threaded inserts, pin and swaged collar, breakstem fasteners, rivets, tack welding as used in the heavy fabrication industry.
 - f Evidence of at least six unique projects and three joining methods is required.
- 4 Welding for assembly purposes is limited to tack welding.

5 Timeframe

All activities are expected to be completed within commercially acceptable timeframes.

Outcomes and performance criteria**Outcome 1**

Prepare, assemble and join heavy fabrication materials.

Performance criteria

1.1 Work is planned in accordance with job requirements.

Range verification of requirements and joining methods, planning of work sequences, identification of potential problems, alignment of fabrication materials, tools and equipment.

1.2 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.

1.3 Materials are assembled and joined in accordance with job specifications, industry practice, and worksite procedures.

Range may include – jigs and fixtures.

1.4 Datum points and lines are used to aid assembly and alignment of fabrication materials in accordance with job specifications.

1.5 Assembly tools, and where appropriate, machinery are used in accordance with industry practice.

1.6 Distortions are corrected by mechanical or thermal means to meet job specifications in accordance with industry practice and worksite procedures.

1.7 Tools, machines, and equipment are cleaned, and waste materials disposed of in accordance with workplace procedures.

Outcome 2

Inspect the completed assemblies.

Performance criteria

2.1 Assemblies are inspected for compliance with specifications and any deviations are rectified.

Range visual examination, tolerance checks, dimensional checks.

2.2 Completion of work is reported in accordance with worksite procedures.

Replacement information	This unit standard and unit standard 25700 replaced unit standard 2420 and unit standard 2424.
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Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 July 2009	31 December 2022
Review	2	20 July 2017	31 December 2022
Review	3	24 January 2019	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.