Title	**Perform fabrication operations**		
Level	**3**	**Credits**	**10**

Purpose	This unit standard is designed for people in fabrication and related trades, and covers fabrication operations. People credited with this unit standard are able to: prepare for fabrication of components, fabricate components, and adjust and maintain fabrication machines.

Classification	Mechanical Engineering > Engineering - Fabrication

Available grade	Achieved

Guidance information

1 Unit 21912, *Apply safe working practices on an engineering worksite* is recommended for entry into this unit standard.

2 References and legislation
Health and Safety at Work Act 2015 and supporting Regulations.
WorkSafe New Zealand. *Guidelines for Guarding Principles and General Safety for Machinery*. Available at: http://www.eat.worksafe.govt.nz/worksafe/information-guidance/all-guidance-items/machinery-guidelines-for-guarding-principles-and-general-safety-for.
Accident Compensation Corporation and Department of Labour. *Metal Industry Guidelines for Safe Work*. Wellington: ACC, 2007. Available from http://www.acc.co.nz.
Timings R. (2011) *Fabrication and welding engineering*. Routledge. Abingdon, England. ISBN 978-0-7506-6691-6.

3 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the fabrication and wider mechanical engineering industry sectors as examples of best practice.
Safety guidelines – guidelines for the safe operation of machinery and tools, such as those listed in the references, as well as guidelines for specific machines.
Workshop procedures refer to procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, drawings, job specifications, job breakdowns, assembly instructions, test procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.

4 Range
Components – based on rectangular, cylindrical, conical, or pyramidal shapes; simple transitions; structural frames.
Materials – aluminium, mild steel, and stainless steel in the range 0.4mm to 6mm thickness.
Assembly methods – examples are fasteners, welding.
Fabrication processes – marking out, cutting, forming, assembly.
Evidence of fabrication of three different types of components:
- one transition;
- one conical or pyramidal;
- one from rectangular, cylindrical, or structural frames;
- and using two materials of different thickness and type.

5 Assessment information
All activities must comply with applicable workshop procedures and must be consistent with accepted industry practice. Use of texts referenced above is recommended.

Outcomes and performance criteria

Outcome 1

Prepare for fabrication of components.

Performance criteria

1.1 Drawings and/or job specifications are interpreted and fabrication processes are clarified with supervisor.

1.2 Machines and tools are selected and their operating procedures and fitness for use is determined.

1.3 Materials are selected in accordance with job specifications.

Outcome 2

Fabricate components.

Performance criteria

2.1 Fabrication processes are demonstrated by fabricating components. Safety guidelines are adhered to during fabrication.

2.2 Cutting, bending, and joining allowances are applied.

2.3 Machines and tools are set and used safely.

2.4 Fabrications are inspected and measured for compliance with job specifications, and any non-conformance identified.

Outcome 3

Adjust and maintain fabrication machines.

Performance criteria

3.1 Machines are left clean and ready for next use, and any unusable machines and tools are reported to the supervisor.

3.2 Waste material is disposed of in accordance with workshop procedures.

3.3 Routine checks, adjustments, and lubrication are carried out in accordance with machine operating procedures.

Planned review date	31 December 2022

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 May 2017	31 December 2017
Revision	2	20 July 2017	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 Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.