

Title	Cut fabrication materials using machines		
Level	4	Credits	10

Purpose	<p>This workplace unit standard is intended for people training to become engineering fabricators and covers non-automated machine cutting of fabrication materials.</p> <p>People credited with this unit standard are able to prepare for cutting of fabrication materials; cut fabrication materials; and inspect materials after cutting.</p>
----------------	---

Classification	Mechanical Engineering > Engineering - Fabrication
-----------------------	--

Available grade	Achieved
------------------------	----------

Prerequisite	Unit 29650, <i>Demonstrate knowledge of the safe use of powered equipment in a mechanical engineering or fabrication workshop</i> or demonstrate equivalent knowledge and skills.
---------------------	---

Guidance Information

1 References

Health and Safety at Work Act 2015.

Accident Compensation Corporation and Department of Labour. *Metal Industry Guidelines for Safe Work*. Wellington: ACC, 2007. Available from <http://www.acc.co.nz>.

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.

Specifications – detail that defines an object being made; commonly communicated by annotated and dimensioned drawings; by written description, or by other communication media. External references may also be used to specify objects such as tables or industry standards.

Workplace procedures – 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, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.

3 Related unit standards

This unit standard is one of a comprehensive set of fabrication unit standards. Other available related unit standards can be found by searching the Directory of

Assessment Standards (DAS) on the NZQA website <http://www.nzqa.govt.nz> in the Engineering - Fabrication domain.

4 Context

This unit standard can be assessed in a heavy or light fabrication context.

5 Timeframe

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

Outcomes and performance criteria

Outcome 1

Prepare for cutting of fabrication materials.

Range six projects using at least three different cutting machines.

Performance criteria

1.1 Work is planned in accordance with job requirements.

Range work requirements, materials, tools and equipment, work sequences, identification of potential problems.

1.2 Materials are selected and cutting characteristics determined in accordance with job requirements.

Range selection examples are – material grade, thickness;
material examples are – sheet, plate, structural sections such as angles, channels, pipes, and tubes.

1.3 Cutting machines, fluids, and equipment are selected in accordance with cutting requirements and accepted industry practice.

Range examples of cutting machines are – guillotines, croppers, cutoff saws, drop saws, punches and notchers, band saws. Sources of power transmission may include mechanical, pneumatic, or hydraulic with manual or electronic control systems.

1.4 Machines are set and settings verified in accordance with job requirements.

Range setting examples are – blade (tooth pitch and type), cutting allowances, shear blade clearance, punch and die clearances, speed and feed, rake angle.

Outcome 2

Cut fabrication materials.

Range projects prepared in outcome 1.

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.

2.2 Materials are cut in accordance with specifications.

2.3 Cut edges are deburred to conform to specifications.

2.4 Machines are left in clean and safe condition ready for next use.

Outcome 3

Inspect materials after cutting.

Performance criteria

3.1 Cut materials are inspected for conformance with specifications, and any deviations rectified or noted, in accordance with workplace procedures.

3.2 Completion of work is reported in accordance with workplace procedures.

Replacement information	This unit standard replaced unit standard 25702 and unit standard 25703.
--------------------------------	--

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	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.