

Title	Cut steel using the manual gas cutting process		
Level	3	Credits	2

Purpose	<p>This unit standard is intended for use in industry.</p> <p>People credited with this unit standard are able to prepare to cut; and cut steel using the manual gas cutting process to industry standard.</p>
----------------	--

Classification	Mechanical Engineering > Welding
-----------------------	----------------------------------

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

Prerequisites	Unit 29651, <i>Demonstrate knowledge of health and safety when welding and thermal cutting</i> , or demonstrate equivalent knowledge and skills.
----------------------	--

Guidance Information

1 References

Health and Safety at Work Act 2015.

Health and Safety in Welding. Wellington: Department of Labour, 2006. Available from <http://www.worksafe.govt.nz>.

WTIA Technical Note 5, *Flame cutting of steels*. Welding Technology Institute of Australia, 1994. Available from Heavy Engineering Research Association, PO Box 76134, Manukau City, Manukau 2241.

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.

Gas cutting – oxygen cutting using a fuel gas such as acetylene or liquid petroleum gas (LPG).

Industry standard – Class 3 of WTIA Technical Note 5, or worksite equivalent.

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 metal cutting set:

- Unit 25783, *Demonstrate knowledge of metal cutting and gouging processes* (Level 3); an introductory standard to provide foundation awareness for cutting and gouging.
- Unit 30279, *Cut steel using the manual gas cutting process* (Level 3); a cutting standard specific to manual (not automated) gas cutting.
- Unit 30280, *Cut metals using the manual plasma cutting process* (Level 3); a cutting standard specific to manual (not automated) plasma cutting.
- Unit 18106, *Gouge steel using the air carbon arc gouging process* (Level 3); a gouging specific unit standard.
- Unit 2691, *Cut metals using mechanised thermal cutting equipment* (Level 4); a cutting standard for automated cutting using gas or plasma process.

Outcomes and performance criteria

Outcome 1

Prepare to cut steel using the manual gas cutting process.

Performance criteria

- 1.1 Equipment is assembled and made ready for use in accordance with manufacturer's instructions.
- 1.2 Consumables are selected in accordance with cutting requirements.
- Range gasses, tips.
- 1.3 Steel is positioned and supported for cutting in accordance with accepted industry practice.
- 1.4 Cutting sequence is planned to minimise steel distortion in accordance with accepted industry practice.
- 1.5 Cutting parameters are established in accordance with cut type, steel configuration, thickness, and equipment capability.
- Range parameters – tip size, gas pressures, flame type, travel speed.

Outcome 2

Cut steel using the manual gas cutting process to industry standard.

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 Steel is cut to industry standard in accordance with workplace procedures.

Range five cuts including sheet or plate, pipe, sections, hole piercing, bevelling.

2.3 Cuts are compared to quality requirements of industry standard by visual examination. Unsatisfactory cuts are corrected in accordance with accepted industry practice.

Range examples of typical imperfections are – gouges, top edge melting, cut not square or straight, excessive adhering slag.

Replacement information	This unit standard and unit standard 30280 replaced unit standard 2683.
--------------------------------	---

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.