

<b>Title</b>	<b>Produce molten metal using metal melting furnace</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	People credited with this unit standard are able to: prepare furnace and materials to produce molten metal; melt metal in furnace; tap molten metal into vessel; and shut down furnace.
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<b>Classification</b>	Mechanical Engineering > Metal Forming
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Unit 2373, *Work safely with molten metals* is recommended for entry into this unit standard.
- 2 References and legislation  
Health and Safety at Work Act 2015 and supporting regulations.  
Hazardous Substances and New Organisms Act 1996.  
Resource Management Act 1991.  
WorkSafe New Zealand. *Health and Safety Guidelines on the Management of Hazards in the Metal Casting Industry*. Available at:  
<http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/metal-casting-industry-health-and-safety-guidelines-for-the-management-of-hazards-in/metal-casting-hs-guidelines.pdf>.
- 3 Definitions  
*Accepted industry practice* refers to approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.  
*Workplace procedures* refer to procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – 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.
- 4 Assessment Information  
All activities must comply with applicable workplace procedures and must be consistent with accepted industry practice.

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### Outcomes and performance criteria

#### Outcome 1

Prepare furnace and materials to produce molten metal.

**Performance criteria**

- 1.1 Furnace condition is checked.
- 1.2 Furnace is set up.
- 1.3 Material requirements are identified in accordance with the metal specification.
- 1.4 Materials are selected and prepared.

**Outcome 2**

Melt metal in furnace.

**Performance criteria**

- 2.1 Furnace operation, emergency procedures, and danger signals are identified in accordance with workplace safety policy.
- 2.2 Furnace is started and operated.
- 2.3 Furnace is charged with material.
- 2.4 Furnace operating conditions are maintained at optimum performance for the material in accordance with job specification.
- 2.5 Samples are tested, and chemical adjustments are made in accordance with the metal specification under supervision.
- 2.6 Post melt treatment is carried out.

**Outcome 3**

Tap molten metal into vessel.

**Performance criteria**

- 3.1 Safety requirements are complied with.
- 3.2 Receiving vessel is checked and positioned.
- 3.3 Molten metal transfer into vessel is made.

**Outcome 4**

Shut down furnace.

**Performance criteria**

- 4.1 Furnace shut down is completed.

4.2 Work area is cleaned to ensure safe environment.

4.3 Documents are completed.

<b>Planned review date</b>	31 December 2021
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 October 1994	31 December 2012
Revision	2	14 April 1997	31 December 2012
Revision	3	5 January 1999	31 December 2012
Review	4	19 October 1999	31 December 2012
Review	5	19 May 2006	31 December 2016
Rollover and Revision	6	17 November 2011	31 December 2022
Review	7	15 September 2016	N/A
Revision	8	23 November 2017	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.