

Title	Pour molten metal into moulds		
Level	2	Credits	5

Purpose	People credited with this unit standard are able to: prepare equipment for pouring molten metal; tap molten metal into vessel; pour molten metal into moulds; and clean vessel and complete documentation.
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Classification	Mechanical Engineering > Metal Forming
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Available grade	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.
Metal forming refers to the metalworking process of creating metal parts and objects through, for example sand casting, die casting, investment casting, continuous casting, centrifugal casting, forging, extrusion, three-dimensional additive metal manufacturing.
Workplace procedures refer to the 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.
- 4 Assessment Information
All activities must comply with applicable workplace procedures and must be consistent with accepted industry practice.

Outcomes and performance criteria

Outcome 1

Prepare equipment for pouring molten metal.

Performance criteria

- 1.1 Molten metal quantity and specification are established.
- 1.2 Vessel of suitable size and type is selected to meet pour requirements.
- 1.3 Vessel condition is checked.
- 1.4 Vessel is pre-heated to receive hot metal.

Outcome 2

Tap molten metal into vessel.

Performance criteria

- 2.1 Safety requirements are complied with.
- 2.2 Molten metal transfer is made.
- 2.3 Pre-pouring metal treatment is carried out.
- 2.4 Vessel safety devices for transit are activated.
- 2.5 Vessel is transported to pouring and/or treatment area safely and without spillage.

Range may include but is not limited to – manual and mechanical lifting devices.

Outcome 3

Pour molten metal into moulds.

Performance criteria

- 3.1 Moulds are examined.
- 3.2 Temperature of molten metal is checked in accordance with specification.
- 3.3 Vessel is prepared for pouring.
- 3.4 Slag and/or dross is removed from molten metal.
- 3.5 Test bar and samples are poured.
- 3.6 Pour is made into moulds in a manner that avoids defects in casting.

- 3.7 Feeding aids and processes are applied.
- 3.8 Premature mould failure is rectified when apparent.

Outcome 4

Clean vessel and complete documentation.

Performance criteria

- 4.1 Excess metal is poured into pigs or ingots and identified.
- 4.2 Vessel is cleaned.
- 4.3 Documents are completed.

Planned review date	31 December 2022
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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 2018
Review	7	15 September 2016	31 December 2022
Review	8	17 August 2017	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.