

Title	Prepare and mix sand for metal casting processes		
Level	3	Credits	20

Purpose	People credited with this unit standard are, for metal casting processes, able to: prepare for mixing of sand; mix sand using mixing equipment; test and correct sand mixture; and unload and clean mixing equipment.
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Classification	Mechanical Engineering > Metal Forming
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Available grade	Achieved
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Guidance Information

- 1 References and legislation
 Health and Safety at Work Act 2015.
 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>.
- 2 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.
- 3 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 for mixing of sand for metal casting processes.

Performance criteria

1.1 Pre-start up checks on mixing equipment are completed.

Range process – may include but is not limited to continuous or batch type; equipment – any two of mill, muller, mixer.

1.2 Formula for sand mix is ascertained for job requirement, or machine is calibrated to formula.

Outcome 2

Mix sand using mixing equipment for metal casting processes.

Performance criteria

2.1 Type of sand is determined and mixed to job requirements.

Range may include but is not limited to – chemically bonded sand, green sand, resin coated sand.

2.2 Equipment performance is monitored.

Range may include but is not limited to – mill, muller, mixer.

2.3 Material supply is monitored and maintained to meet mixer requirements.

Range water, sand, additives, reclaimed sand.

Outcome 3

Test and correct sand mixture for metal casting processes.

Performance criteria

3.1 Sand mix sample is extracted from equipment.

3.2 Sample is tested to establish specifications of the load.

Range may include but is not limited to – chemically bonded sand, green sand, resin coated sand.

3.3 Test results are interpreted and adjustments made to sand mixture.

Outcome 4

Unload and clean mixing equipment for metal casting processes.

Performance criteria

4.1 Load from equipment is discharged into receiving vessel.

- 4.2 Equipment is shut down and power isolated.
- 4.3 Equipment is cleaned.
- 4.4 Waste material is disposed of in accordance with regulatory requirements.

Planned review date	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

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.