

Title	Carry out heat treatment of metal parts under supervision		
Level	2	Credits	2

Purpose	People credited with this unit standard are able to, under supervision: prepare for the heat treatment of parts, and carry out the heat treatment of metal parts and complete records.
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Classification	Mechanical Engineering > Engineering - Materials
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Available grade	Achieved
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Entry information	
Recommended skills and knowledge	Unit 21911, <i>Demonstrate knowledge of safety on engineering worksites</i> ; and Unit 21912, <i>Apply safe working practices on an engineering worksite</i> ; or demonstrate equivalent knowledge and skills.

Explanatory notes

1 References

Health and Safety at Work Act 2015 and supporting Regulations.

Health and Safety Guidelines on the Management of Hazards in the Metal Casting Industry (Casting Technology NZ Inc. in association with the Occupational Safety and Health Service, 1997). This document should be interpreted in the context of the Health and Safety and Work Act 2015 and supporting regulations. Available from <http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/metal-casting-industry-health-and-safety-guidelines-for-the-management-of-hazards-in>.

2 Definition

Accepted industry practice - refers to approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry as examples of best practice.

Job specifications – instructions relevant to the safe completion of the specific task, such as technical specifications, assembly instructions, drawings, parts list, standards, codes of practice, test and commissioning procedures, and verbal instructions.

3 Assessment information

Heat treatment processes are limited to hardening, tempering, annealing, normalising and stress relieving, using equipment such as furnace, oven, or flame hardening apparatus.

Assessment across all outcomes requires the use of at least one heat treatment process on parts which may include but are not limited to – racks, pinions, screws, bolts, springs, worm shafts, punches, extrusion dies, and form rolls.

Outcomes and evidence requirements

Outcome 1

Prepare for the heat treatment of parts under supervision.

Evidence requirements

- 1.1 Material specification of parts and treatment process are established in accordance with job specifications.
- 1.2 Heat treatment procedures are established for process and part in accordance with job specifications.
- 1.3 Parts are prepared, stacked, suspended, or loaded in accordance with industry practice.

Outcome 2

Carry out the heat treatment of metal parts and complete records under supervision.

Evidence requirements

- 2.1 Heating equipment is started and operated in accordance with industry practice.
- 2.2 Parts are heat treated to the process requirements in accordance with accepted industry practice and job specifications.
- 2.3 Heat-treated parts are tested for hardness if required, and are examined for faults in accordance with accepted industry practice.
- 2.4 Heating equipment is shut down in accordance with accepted industry practice.
- 2.5 Heat treatment records are completed in accordance with accepted industry practice.

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 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Review	4	19 October 1999	31 December 2011
Review	5	21 February 2005	31 December 2014
Review	6	17 June 2011	31 December 2017
Review	7	8 December 2016	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>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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.