

Title	Heat treat aeronautical metals and components		
Level	4	Credits	15

Purpose	People credited with this unit standard are able to: prepare to heat treat aeronautical metals and components; heat treat metals and components; and carry out task completion activities.
----------------	--

Classification	Aeronautical Engineering > Aircraft Structures
-----------------------	--

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

Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 Definition
Enterprise 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.

Outcomes and performance criteria

Outcome 1

Prepare to heat treat aeronautical metals and components.

Performance criteria

- 1.1 Task is determined by reviewing maintenance documentation and enterprise procedures.
- 1.2 Work area is prepared, and resources are obtained and checked for serviceability or status.

Range	may include but is not limited to – publications, tools, materials, safety equipment, environmental conditions established.
-------	---
- 1.3 Equipment is set up.

Range	may include but is not limited to – oven, salt bath, temperature stabilised, quenching tank prepared.
-------	---

1.4 Component identity is confirmed with documentation.

1.5 Component is prepared for heat.

Outcome 2

Heat treat metals and components.

Range by solution and/or precipitation.

Performance criteria

2.1 Component is racked in oven or bath.

2.2 Soak time, temperature, and ramp rate are controlled.

2.3 Component is removed and quenched.

2.4 Heat treated state of metals and components are controlled.

Range temperature, time.

2.5 Heat treated metals and components are tested.

Range hardness, conductivity, tensile strength.

2.6 Post-treatment processes are carried out.

Range precipitation, hardening, tempering.

2.7 Inspections are obtained.

Outcome 3

Carry out task completion activities.

Performance criteria

3.1 Component is prepared for use, storage, or transit.

3.2 Completion activities specific to the task and work area are carried.

Range may include but is not limited to – tool control, cleanliness, tidiness, return of publications, preparation for next activity, return of aircraft and systems to normal.

3.3 Leftover items, parts, and materials are disposed of.

Range may include but is not limited to – serviceable, unserviceable, surplus, waste, scrap, hazardous.

3.4 Documentation is completed.

Planned review date	31 December 2027
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 June 1995	31 December 2016
Revision	2	7 August 1997	31 December 2016
Revision	3	8 May 2001	31 December 2016
Review	4	26 March 2007	31 December 2016
Review	5	18 June 2014	31 December 2021
Review	6	26 March 2020	N/A
Rollover and Revision	7	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference	0028
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.