

Title	Liquid oxygen (LOX) clean aerospace components		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: identify LOX cleaning treatment for aerospace components; carry out the LOX cleaning process of aerospace components; and complete finishing activities related to the LOX cleaning of aerospace components.
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Classification	Aeronautical Engineering > Aerospace Engineering
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Available grade	Achieved
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Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 Definitions
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.
LOX refers to oxygen that has been changed into its liquid state by lowering its temperature.
- 3 Evidence for performance criterion 2.3 may be gathered under simulated conditions.
- 4 Cleaning of aerospace components may include preparation, LOX cleaning, recognition of contaminants, and maintenance of a LOX clean state of components and facility.

Outcomes and performance criteria

Outcome 1

Identify LOX cleaning treatment for aerospace components.

Performance criteria

- 1.1 Task is determined by reviewing maintenance documentation and manuals.
- 1.2 Component identity is confirmed with documentation by comparing serial and part numbers.

- 1.3 Work area is prepared, and resources are obtained and checked for serviceability.
- Range may include but is not limited to – publications, tools, equipment, safety equipment, clean room environmental conditions established, hazard symbols displayed.
- 1.4 Substrate is identified.
- Range may include but is not limited to – composite, ferrous, non-ferrous.
- 1.5 Surface contaminant and condition is identified.
- Range may include but is not limited to – grease, oil, paint, oxidation, other solid or liquid contaminants.
- 1.6 Cleaning solvent and cleaning agent is identified and confirmed.
- Range may include but is not limited to – hydrofluoroethers, hydrofluorochlorocarbons, hydrofluorocarbons, isopropyl alcohol, ethyl alcohol, deionised water.

Outcome 2

Carry out the LOX cleaning process of aerospace components.

Performance criteria

- 2.1 Component is cleaned in sequence.
- Range may include but is not limited to – preclean, rough clean, precision clean, mechanical clean, ultrasonic clean.
- 2.2 Equipment is monitored and adjusted.
- 2.3 Initial action to be taken in an abnormal situation is demonstrated.
- Range may include but is not limited to – fire, spillage, personal contamination by cleaning medium.
- 2.4 Inspections are obtained.
- Range may include but is not limited to – visual, black light (UV), wipe test, dewpoint analysis, acidity and alkalinity test.

Outcome 3

Complete finishing activities related to the LOX cleaning of aerospace components.

Performance criteria

- 3.1 Aerospace components are prepared for use, storage, or transit.
- Range may include but is not limited to – locking, inhibiting, blanking, packing.
- 3.2 Completion activities specific to the task and work area are carried out.
- Range completion activities may include but are not limited to – tool control, cleanliness, tidiness, return of publications.
- 3.3 Resources are checked for serviceability and returned to service or storage.
- Range may include but are not limited to – tools, equipment, safety equipment.
- 3.4 Leftover parts and materials are disposed of.
- Range may include but is not limited to – serviceable, unserviceable, surplus, waste, scrap, hazardous.
- 3.5 Documentation is completed.
- 3.6 Work area is left in a state that enables the next task to begin.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 April 2020	N/A
Revision	2	30 March 2023	N/A

Consent and Moderation Requirements (CMR) reference	0028
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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 Ringa Hora Services Workforce Development Council qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.