

Title	Fabricate and repair composite aeronautical components at elevated temperatures		
Level	4	Credits	42

Purpose	People credited with this unit standard are able to: prepare to fabricate and repair composite aeronautical components at elevated temperatures; lay-up fabrication and repair materials; restore finish and prepare components for use; and carry out task completion activities.
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Classification	Aeronautical Engineering > Aeronautical Composites
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Available grade	Achieved
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Prerequisites	Unit 4023, <i>Fabricate and repair composite aeronautical components at room temperature</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 Definitions
Elevated temperatures are those where materials are cured above 65 degrees Celsius (150 degrees Fahrenheit).
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 fabricate and repair composite aeronautical components at elevated temperatures.

Performance criteria

- 1.1 Task is determined by reviewing documentation.

1.2 Work environment is set up.

Range may include but is not limited to – publications, materials, tooling, equipment, safety equipment, environmental conditions established.

1.3 Fabrication and repair task is planned.

Range inspection, damage determination.

1.4 Resources are obtained and checked for serviceability or status.

Range may include but is not limited to – publications, tools, equipment, safety equipment, materials.

1.5 Repair or manufacturing sketches are produced to meet manufacturer's specifications.

1.6 Component is prepared.

Range may include but is not limited to – cleaned, disassembled, support tooling attached, damage removed, surface prepared.

1.7 Tooling is assembled, prepared, positioned, and supported ready for lay-up.

1.8 Equipment is prepared for use.

Range may include but is not limited to – operate, calibrate.

1.9 Work area is secured to prevent disruption to lay-up process.

Outcome 2

Lay-up fabrication and repair materials.

Performance criteria

2.1 Materials are prepared.

2.2 Materials are applied.

2.3 Test coupon is fabricated and prepared in accordance with manufacturer's specifications.

2.4 Pressure is applied and controlled in accordance with manufacturer's specifications.

2.5 Cure time and temperature are controlled in accordance with manufacturer's specifications.

Outcome 3

Restore finish and prepare component for use.

Performance criteria

- 3.1 Tooling and support equipment are removed without causing damage.
- 3.2 Component serviceability is verified.
 - Range inspecting, obtaining specialist advice.
- 3.3 Test coupon is tested in accordance with manufacturer's specifications.
- 3.4 Further fabrication and/or repair work is initiated for non-conforming work.
- 3.5 Composite material edges are sealed.
- 3.6 Component is finished, and surface restored in accordance with manufacturer's specifications.
 - Range may include but is not limited to – potting and filling, surface finishing, edge trimming and sealing.
- 3.7 Component is prepared for storage or transit.
- 3.8 Inspections are obtained.
- 3.9 Documentation is completed.

Outcome 4

Carry out task completion activities.

Performance criteria

- 4.1 Completion activities specific to the task and work area are carried out.
 - 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.
- 4.2 Resources are checked for serviceability and returned to service or storage.
 - Range tools, equipment, safety equipment.
- 4.3 Leftover items, parts, and materials are disposed of.
 - Range may include but is not limited to – serviceable, unserviceable, surplus, waste, scrap, hazardous.

Planned review date	31 December 2024
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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	24 October 2014	31 December 2021
Review	6	26 March 2020	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 ServiceIQ qualifications@serviceiq.org.nz if you wish to suggest changes to the content of this unit standard.