



Australian Government

MEASTR0019 Perform bolted repairs to composite skins

Release: 1

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Modification History

Release 1. Application changed. Elements and Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA425 Perform bolted composite skin repairs.

Application

This unit describes the skills and knowledge required to apply hand skills and use maintenance publications, applicable materials, tools and methods to repair aircraft composite skin surfaces using bolted repair techniques during scheduled or unscheduled maintenance. Work may involve individual and team-related activities.

Applications include composite skin surfaces from fixed and rotary wing aircraft and aircraft components either on-aircraft or in the workshop.

If this unit is selected, one of the following units should also be selected:

- MEA339 Inspect, repair and maintain aircraft structures
- MEAMEC0056 Inspect and maintain structures and related components of non-pressurised small aircraft

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEASTR0001 Inspect aircraft structures

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan repair	1.1. Assess extent of damage using visual and tap test methods to assist in determining repair procedure 1.2 Support and prepare structure in accordance with the applicable

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	maintenance manual to ensure personnel safety and freedom from damage 1.3 Identify bolted repair scheme in accordance with structural repair manual and/or approved data 1.4 Obtain specialist advice for approved repair scheme where a standard repair scheme cannot be identified or damage is out of limits 1.5 Organise required materials and equipment required in accordance with repair procedure
2. Repair components using bolted patches	2.1 Clean up damage ready for repair while observing all relevant work health and safety (WHS) requirements, including using material safety data sheets (MSDSs) and items of personal protective equipment (PPE) 2.2 Obtain patch material and fabricate patches in accordance with the applicable repair scheme 2.3 Obtain repair plug material and cut to size 2.4 Fit patches and secure with fasteners in accordance with repair scheme while observing all relevant WHS requirements, including using MSDSs and items of PPE 2.5 Apply sealant in accordance with repair scheme 2.6 Perform required restoration on surface finish 2.7 Complete and process required maintenance documentation in accordance with standard enterprise procedures 2.8 Tag, seal or package completed assemblies in accordance with requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance manuals and repair schemes and drawings or sketches.
- Writing skills to complete documentation.
- Numeracy skills to interpret technical information including sketches and drawings.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA425 Perform bolted composite skin repairs.

Links

Companion Volume implementation guides are found in VETNet –

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEASTR0019 Perform bolted repairs to composite skins

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Performance Evidence

There must be evidence the candidate has completed all the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- perform bolted repairs to composite skins during scheduled or unscheduled maintenance through the application of repair patches on at least two of the following types of repair:
 - external
 - internal
 - external/internal combination
- identify aircraft composite materials and their basic properties by interpretation of markings and visual means for the repairs being performed to inform selection of repair scheme
- correctly interpret and produce repair scheme drawings or sketches
- use appropriate hand tools and machines to perform the above bolted repairs, including:
 - drilling/cutting equipment
 - material fasteners.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- aircraft construction principles and the causes of structural damage, including metal fatigue and corrosion
- structural fatigue preventative measures
- composite terminology and materials used, including their properties and applications in aircraft structures
- bolted repair methods
- types of patch material
- fastener types, specifications and identification
- plug materials
- use of scrim to prevent galvanic corrosion
- sealants used in bolted patch repairs and their application and handling
- paints and finishes for composite structure

- work health and safety (WHS) precautions for repairing aircraft structure
- how to access and apply material safety data sheets (MSDSs) for aircraft structural repairs
- relevant personal protective equipment (PPE) for aircraft structural repairs.
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Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered during the installation of bolted repairs to composite skins. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to making bolted repairs to composite skins
 - general-purpose tools and test equipment found in most routine situations.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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