



Australian Government

MEASTR0022 Weld aircraft components using the gas tungsten arc welding process

Release: 1

MEASTR0022 Weld aircraft components using the gas tungsten arc welding process

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 MEA432 Weld aircraft components using the gas tungsten arc welding process.

Application

This unit describes the skills and knowledge required to apply knowledge of gas tungsten arc welding (GTAW) processes to welding applicable aircraft parent metal groups as specified by the regulators during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

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).

The unit covers the development of competency elements required to gain approval within the Civil Aviation Safety Authority (CASA) or Defence Aviation Safety Authority (DASA) regulatory systems to weld aircraft components using the gas metal arc welding (GMAW) process. Individuals will be authorised to weld specific parent metal groups, as specified in CAAP 33-1(1) Aircraft manual welding: approvals and qualifications.

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

Pre-requisite Unit

MEA107 Interpret and use aviation maintenance industry manuals and specifications

MEA154 Apply work health and safety practices in aviation maintenance

MEA156 Apply quality standards during aviation maintenance activities

MEA157 Complete aviation maintenance industry documentation

MEM05026 Apply welding principles

MEM05044 Perform welds to code standards using gas tungsten arc welding process

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
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Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare to perform repair or fabricate test pieces using GTAW process	1.1 Identify materials or components to be welded and related parent metal group in accordance with applicable data 1.2 Select and set up required welding equipment and consumables in accordance with standard enterprise procedures 1.3 Prepare component or materials for welding 1.4 Adjust equipment ready for the welding process in accordance with equipment instructions
2. Gas tungsten arc weld component	2.1 Perform welding to the required standard in accordance with the applicable repair scheme or drawing 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 Inspect completed welds for defects and rectify any detected defects to meet specifications and standards 2.3 Complete required documentation in accordance with standard enterprise procedures

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 equipment information, welding requirements and repair schemes.
- Writing skills to complete documentation.
- Numeracy skills to interpret technical information including sketches and drawings, and data.

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 MEA432 Weld aircraft components using the gas tungsten arc welding process.

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 MEASTR0022 Weld aircraft components using the gas tungsten arc welding process

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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:

- use gas tungsten arc welding (GTAW) processes to weld at least three simulated aircraft components to the standards specified by the regulators Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA) and to specification during scheduled or unscheduled maintenance and as specified in the CAAP 33-1(1) Aircraft manual welding – Approvals and Qualifications
- select materials used in the construction of aircraft components that are suitable for GTAW
- apply GTAW to components where it is specified as either a fabrication or repair technique
- apply welding techniques in the context of welding aircraft components or materials
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- regulatory requirements applicable to aircraft welding
- standards for aircraft welding, including:
 - regulations relating to required test pieces
 - process specifications
 - repair manuals
 - overhaul manuals
 - Australian and New Zealand Standards
- the procedure for assessment of weld test pieces
- the use of GTAW in relation to specified aircraft parent metal groups, including:
 - aluminium alloys
 - magnesium alloys
 - carbon steels and low alloy steels
 - corrosion and heat resisting steels
 - nickel alloys

- copper-based alloys
- titanium alloys
- work health and safety (WHS) precautions for GTAW of aircraft components.
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Assessment Conditions

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

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in repairing and modifying aircraft metal structures. The following conditions must be met for this unit:

- Test pieces specified for each parent metal group for which approval is sought may be completed in the workplace or a simulated workplace. The individual must be provided with all required equipment, consumables, PPE, materials and data/drawings relating to the test pieces that are required for the approvals being sought.
- Assessment of test pieces must be carried out in a testing facility that meets the requirements specified by the applicable Regulator.
- Assessment methods are specified in the CAAP 33-1(1) Aircraft manual welding: approvals and qualifications.

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

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

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