



Australian Government

MEASTR0024 Weld aircraft components using the plasma arc welding process

Release: 1

MEASTR0024 Weld aircraft components using the plasma 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 MEA434 Weld aircraft components using the plasma arc welding process.

Application

This unit describes the skills and knowledge required to gain approval within the Civil Aviation Safety Authority (CASA) or the Australian Defence Force (ADF) regulatory systems to weld aircraft components using the plasma arc welding (PAW) process of applicable parent metal groups as specified by the regulators during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Individuals will be authorised to weld specific parent metal groups, as specified in CAAP 33-1(1) Aircraft Manual Welding: Approvals and Qualifications,

The unit is used in workplaces that operate under the airworthiness regulatory systems of the 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

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

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Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.

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1. Prepare to perform repair or fabricate component using PAW process	1.1 Identify materials or components to be welded, other welding requirements and the applicable parent metal group in accordance with relevant data and standard enterprise procedures 1.2 Select and set up welding equipment and consumables, especially the orifice, in accordance with standard enterprise procedures 1.3 Prepare components or materials for welding in accordance with standard enterprise procedures 1.4 Adjust equipment ready for welding process in accordance with equipment instructions
2. Plasma 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 the use of material safety data sheets (MSDSs) and items of personal protective equipment (PPE) 2.2 Inspect completed welds for defects and rectify any defects in accordance with standard enterprise procedures
3. Complete documentation	3.1 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 MEA434 Weld aircraft components using the plasma 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 MEASTR0024 Weld aircraft components using the plasma 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 plasma arc welding (PAW) techniques 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 specifications 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 PAW
- apply PAW to components where it is specified as either a fabrication or repair technique
- safely apply advanced gas tungsten arc welding skills and principles 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 applicable to 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
- equipment required for PAW and its operation and maintenance requirements
- the relative advantages of the plasma process for welding and cutting
- the composition of gases used in the PAW process
- the use of PAW 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 applicable to PAW and applicable personal protective equipment (PPE).
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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 under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in welding aircraft components using the PAW process. The following conditions must be met for this unit:

- Test pieces specified for each parent metal group for which approval is sought shall be completed in either 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.

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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