



Australian Government

Assessment Requirements for MEASTR0015 Fabricate advanced structural components for aircraft

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 MEA421 Fabricate advanced structural components for aircraft.

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:

- fabricate advanced structural components for aircraft, using materials comprising various types of sheet metal used in aircraft manufacture, including aluminium alloys and structural steel alloys across a range of temper, during scheduled or unscheduled maintenance on structural fabrication tasks for at least one ferrous and one non-ferrous metal component, and:
 - correctly interpret drawings, including third angle projection, isometric, sectional formats and hand sketches
 - develop component flat pattern/s using basic drawing tools, geometric drawing processes, calculating and applying bend allowance/deduction/setback, and utilising:
 - parallel line
 - radial line
 - triangulation
 - use appropriate hand tools, machines (stretching, shrinking, bending, cutting, drilling, rolling, wheeling and folding), forming blocks, templates and presses to form or produce dished, domed, curved components, bent or angled (L, Z, U, hat) sections and lightening holes, flanges and joggles
 - assemble component parts using appropriate hand and machine tools and standard aircraft fasteners to industry standards.

During the above work the candidate must:

- identify various aircraft metals and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means to inform materials selection
- handle and store aircraft metals to industry standards during and after cutting materials
- identify aircraft structural assembly fasteners by interpretation of markings, numbering systems, size, shape and colour while performing hand-forming tasks
- apply appropriate metal heat treatment processes while performing solution treatment
- apply appropriate metal surface treatments while preparing components for further or special treatment.

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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- aircraft construction principles
- causes of structural fatigue and preventative measures
- structural corrosion and preventative measures
- aircraft structural drawings and repair scheme drawings
- material specifications for aluminium alloys and steel alloys used in aircraft structure
- structural material identification by markings and numbering systems
- material identification by chemical, electrical and mechanical methods
- material storage requirements
- hardware types and specifications
- identification of hardware
- sealants used in aircraft structure
- chemical surface treatments
- electroplating
- paints and finishes
- flat pattern development and terminology
- design and manufacture of templates
- design and manufacture of press tools
- methods for folding complex and nested sections
- machinery used for stretching, shrinking, bending, cutting, drilling and rolling, use of forming blocks, templates and press tools to form components
- use of forming blocks, templates and press tools to form components
- work health and safety (WHS) precautions for fabrication of aircraft structural components
- how to access and apply relevant material safety data sheets (MSDSs)
- personal protective equipment (PPE) for fabrication of advanced structural components for aircraft.

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Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Defence Aviation Safety Authority (DASA) and Civil Aviation Safety Authority (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 fabricating advanced structural components for aircraft. 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 fabricating advanced structural components for aircraft
- tools and equipment specified by aircraft maintenance manuals
- 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 and achievement.

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

Links

Companion Volume implementation guides are found in VETNet – -

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