Australian Government

MEA421 Fabricate advanced structural components for aircraft

Release: 3

MEA421 Fabricate advanced structural components for aircraft

Modification History

Release 3. Equivalent to MEA421 Fabricate advanced structural components for aircraft with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and the use of drawings, specifications and maintenance publications to fabricate advanced structural components involving complex and multiple curves and section shapes from aluminium alloys and steel alloys at various temper during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Applications include components for fixed and rotary wing aircraft.

The unit is part of the Aeroskills Structures Maintenance Certificate IV training pathway.

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

Pre-requisite Unit

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1.	Interpret specifications and organise materials	1.1	Specifications and drawings are used to determine material requirements
		1.2	Equipment use is planned by determining the procedure for fabricating component
		1.3	Material is correctly identified in accordance with specifications
		1.4	All materials and equipment are organised
2.	Prepare material and tooling	2.1	Dimensions to material is translated in accordance with specifications
		2.2	Cutting and forming equipment are prepared and adjusted to ensure accuracy of fabrication
		2.3	Material is cut according to specifications ensuring minimisation of wastage and maintenance of surplus material identification while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE)
		2.4	Material requiring special treatment is prepared for the appropriate processes
		2.5	Solution treatment of materials is carried out in accordance with approved procedures and specifications
3.	Form material	3.1	Appropriate forming procedure is determined ensuring that specifications are met and the most suitable forming method is selected
		3.2	Templates are manufactured, where required, by forming method
		3.3	Press tools are designed and manufactured, where required, by forming method

		3.4	Forming equipment is operated correctly and safely to form material in accordance with drawings and specifications
		3.5	Hand forming is performed accurately, where necessary
4.	Hand correct fabricated components	4.1	Components are checked for irregularities and correction requirements determined
		4.2	Irregularities are removed to meet required dimensions and specifications
5.	Inspect components	5.1	Fabricated components are inspected to confirm dimensional accuracy and specifications are met
		5.2	Checking fixtures are used, where appropriate, to ensure requirements are met
		5.3	Components requiring special or further treatment are prepared for the appropriate processes
		5.4	Completed components are tagged or identified, as required

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Components are to be fabricated:	• Using materials comprising various types of sheet metal used in aircraft manufacture, including aluminium alloys and structural steel alloys across a range of temper
Machinery processes include:	• Bending, cutting, rolling, shrinking and stretching
Procedures and	• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

requirements include:

Unit Mapping Information

Release 3. Equivalent to MEA421 Fabricate advanced structural components for aircraft

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371