



Australian Government

MSFFM3024 Construct jigs and fixtures

Release: 1

MSFFM3024 Construct jigs and fixtures

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers preparing and constructing jigs and fixtures to produce furniture components.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Identify the purpose of the jig or fixture	1.1 Purpose of the jig or fixture, and the equipment it is to be used on is established
	1.2 Proposed service life of jig or fixture is established
	1.3 Tolerances allowed are identified
	1.4 Materials for jig construction are established
	1.5 Quality requirements for each stage of the construction process are identified
2 Plan jig or fixture construction	2.1 Plan of proposed jig or fixture is produced
	2.2 Approval of design is gained through workplace procedures
	2.3 Steps or stages in production are planned, noting check

			points for measurements and tests
3	Collect materials and equipment	3.1	Work health and safety (WHS) requirements, including personal protection needs, are observed throughout the work
		3.2	Sufficient materials to complete the project are assembled ready for use
		3.3	Suitable work area is selected
		3.4	Hand and/or power tools are identified and checked for serviceability and assembled in work area
		3.5	Appropriate equipment required is identified and checked for serviceability
4	Construct the jig or fixture	4.1	Production plan is followed to construct the jig or fixture
		4.2	Tools and equipment are used in accordance with workplace procedures
		4.3	Quality checks are conducted at the identified points
		4.4	Modifications are identified and recommended within workplace procedures
		4.5	Modifications to the plan are documented and followed
		4.6	Jig or fixture is checked for fitness for purpose
5	Finalise operation and maintain equipment	5.1	Work area is cleaned, hand and/or power tools and equipment are cleaned, maintained and stored in accordance with workplace procedures
		5.2	Machinery is cleaned and left in a safe mode
		5.3	Faulty and/or defective equipment is tagged and reported in accordance with workplace practices
		5.4	Unused hardware is collected and stored for re-use or disposal following workplace procedures
		5.5	Waste and scrap materials are dealt with following workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies 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. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Machines for which jigs and fixtures are made include:	• band saws • cross-cut saws • jig saws • mitre saws • panel and rip saws • belt sanders • panel planers • surface planers • horizontal borers • vertical drill presses • mortisers • tenoners • spindle moulders • overhead and inverted pin routing machines
Uses for jigs and fixtures include:	• holding • shaping • drilling • cutting • routing
Production of components requiring jigs and fixtures include:	• chair legs • shaping curved components • end panels • trenching • grooving
Tools and equipment include:	• measuring tapes or rulers • hammers • mallets • squares

	• bevels • chisels • planes • hand saws • power saws • power drills/screwdrivers • pneumatic tools, compressor and spray equipment • clamps • screwdrivers • pincers
Unit context includes:	• WHS requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods code, and local safe operating procedures • work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements • work requires individuals to demonstrate some discretion, judgement and problem solving in the set up and operation of machines • competency may be demonstrated in workplaces involved in the manufacture of solid timber furniture, domestic furniture, commercial furniture, kitchen and bathroom cabinets and/or furniture components
Materials used in the construction of jigs and fixtures include:	• solid timber • manufactured board • metal • plastics • synthetic solids • laminates and non-ferrous materials
Personal protective equipment includes:	• that prescribed under legislation, regulations and enterprise policies and practices
Information and procedures include:	• workplace procedures relating to the use of tools and equipment • work instructions, including job sheets, cutting lists, plans, drawings and designs • workplace procedures relating to reporting and communication • manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFM3033B Construct jigs and fixtures.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3024 Construct jigs and fixtures

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Performance Evidence

- Interpret work order and locate and apply information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection practices to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, tools, equipment or products
 - maintain required production output and product quality
- Select materials and construct a minimum of three (3) different types of jigs/fixtures, including one (1) for a shaping machine and one (1) which is adjustable
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Types, characteristics, uses and limitations of jigs and fixtures
- Criteria for selecting material for use in jigs and fixtures
- Requirements for cutting, shaping and joining materials
- Identification of equipment, processes and procedures
- Work flow in relation to the use of jigs and fixtures

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification

- be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to a job context, materials and equipment for jig or fixture construction.

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