



Australian Government

FWPCOT3235 Machine material using CNC machining and processing centres

Release: 3

FWPCOT3235 Machine material using CNC machining and processing centres

Modification History

Release	Comments
Release 3	This version released with FWP Forest and Wood Products Training Package Version 4.0.
Release 2	This version released with FWP Forest and Wood Products Training Package Version 3.0.
Release 1	This version released with FWP Forest and Wood Products Training Package Version 2.0.

Application

This unit of competency describes the skills and knowledge required to set up, operate and maintain computer numerical control (CNC) machining and processing centres used to process and cut holes in engineered wood products and timber components in a manufacturing facility. Work also involves operator maintenance.

The unit applies to individuals who work as production workers, timber fabricators and engineered timber products technicians. Operators generally work under broad or limited direction to complete routine activities related to their own work, and take responsibility for their work.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.

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

Pre-requisite Unit

Nil

Unit Sector

Common Technical

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for machining engineered wood products or timber	1.1 Review work order, machining specifications, workplace health and safety requirements, environmental protection practices and emergency procedures for CNC machining operation and, where required, check with appropriate personnel 1.2 Identify and report hazards and use personal protective equipment according to workplace requirements and health and safety legislation to maintain safe work practices 1.3 Obtain the type and quantity of material for machining from a storage location
2. Set up the CNC machine	2.1 Set CNC program to meet work specifications 2.2 Check the CNC machine mechanisms, cutting tools, jigs, emergency stops, gauges, guards and controls for safe and effective operation 2.3 Adjust the CNC machine settings according to work specifications 2.4 Complete trial run to check system and machine operation for accuracy, quality and dimensions of finished work 2.5 Accept or reject trialled material and dispose of according to environmental protection practices 2.6 Complete final adjustments to the CNC program, cutting tools and equipment
3. Operate the CNC machine	3.1 Use the CNC machine, cutting tools and equipment according to organisational safety procedures, manufacturer instructions, operational capacity and purpose and environmental protection practices 3.2 Feed engineered wood product or timber into the CNC machine, operate cutting tools according to tooling requirements and regularly monitor to minimise waste and ensure correct dimensions are produced 3.3 Repair or dispose of incorrect cuts, off-cuts and material with defects according to environmental protection practices 3.4 Identify routine processing problems and resolve or report to appropriate personnel
4. Complete operator maintenance	4.1 Lock out the CNC machine according to workplace health and safety procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.2 Check cutting tools for bluntness or damage 4.3 Remove and replace cutting tools according to manufacturer recommendations 4.4 Dispose of used cutting tools according to environmental protection practices 4.5 Keep machining area clear of dust and debris according to organisational safety procedures 4.6 Record and report production outcomes, machine and equipment faults and maintenance requirements to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Numeracy	- Identify quantities of required material within work plans, and count numbers to be machined - Set numerical data on CNC program according to machining specifications - Calculate the feed rate to optimise quality and quantity of production output - Measure finished dimensions against specifications and appropriate tolerances
Navigate the world of work	Understand main tasks, responsibilities and boundaries of own role
Interact with others	Use modes of communication suitable for the purpose to confirm and clarify understanding
Get the work done	Recognise and respond to routine problems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT3235 Machine material using CNC machining and processing centres Release 3	FWPCOT3235 Machine material using CNC machining and processing centres Release 2	Updated workplace health and safety requirements and foundation skills; clarified the intent of the unit and assessment requirements.	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPCOT3235 Machine material using CNC machining and processing centres

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Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit. There must be evidence that, on at least one occasion, the individual has:

- followed workplace health and safety requirements and environmental protection procedures for processing engineered wood product or timber using one or more of the following types of computer numerical control (CNC) machining and processing centres:
 - CNC three-axis machining centres
 - CNC multi-tasking machining centres
 - CNC flat-bed routers and mortisers
- set computer programs for the CNC machining and processing centres according to work specifications
- machined one or more of the following types of engineered wood products or timber using the CNC machining and processing centres according to work specifications, manufacturer recommendations and within prescribed tolerances:
 - glued laminated timber (glulam)
 - cross-laminated timber (CLT)
 - laminated veneer
 - chipboard
 - medium density fibreboard
 - dressed timber
 - preservative treated timber
- conducted operator maintenance on the CNC machining and processing centres, cutting tools and equipment.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- health and safety hazards or risks related to operating a CNC machine and processing centre for engineered wood products and timber as identified through risk assessments, manufacturer technical information, regulations and industry health and safety guides
- workplace policies and procedures specific to machining engineered wood products and timber using CNC machine and processing centres:
 - health and safety, with particular emphasis on equipment lockout and the use of personal protective equipment (PPE)
 - use of CNC machines, cutting tools and equipment
 - communication reporting lines
 - recording and reporting production outcomes, machine and equipment faults and maintenance requirements
- environmental protection practices for timber manufacturing facilities:
 - reducing water and energy use
 - cleaning plant, cutting tools and equipment
 - disposing of, recycling and reusing timber and other waste
- range of cutting patterns used with CNC machining and processing centres to achieve accurate dimensions and quality of finished work
- system functions and capabilities of CNC software for machining and processing centres
- purpose, features and operation of CNC machining and processing centres and equipment used to machine engineered wood products and timber:
 - three-axis machining centres
 - multi-tasking machining centres
 - flat-bed routers and mortisers
 - dust extraction equipment
 - jigs and shaped templates for routing
- timber characteristics, timber products and timber defects
- methods for assessing cutting tools condition.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - one or more types of CNC machining and processing centres
 - dust extraction equipment
 - jigs and shaped templates for routing

- maintenance tools for boring, routing and mortising operations
- cutting tools suitable for machining operations including cutter, router, boring, drilling and mortising bits
- PPE suitable for machining material using CNC machining and processing centres
- engineered wood product or timber suitable for machining operations using CNC machining and processing centres
- CNC program suitable for the machining operations
- specifications:
 - manufacturer instructions for use and maintenance of equipment
 - work order with specific instructions for machining material using CNC machining and processing centres
 - workplace policies and procedures for machining material using CNC machining and processing centres, including health and safety and emergency procedures and environmental protection procedures
 - template documents for recording production outcomes, equipment faults and maintenance requirements.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>