



Australian Government

FWPCOT3332 Machine timber or engineered wood products using CNC machining and processing centres

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 8.0.

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. Work also involves operator maintenance.

The unit applies to individuals who operate CNC machining and processing centres in a timber or wood products production facility.

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 or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Common Technical (COT)

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 and environmental protection practices and/or procedures, and emergency procedures for CNC machining operation and, where

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	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 type and quantity of timber or engineered wood products for machining from storage location
2. Set up CNC machine	2.1 Set CNC program to meet work specifications 2.2 Check CNC machine mechanisms, cutting tools, jigs, emergency stops, gauges, guards and controls for safe and effective operation 2.3 Adjust 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 timber or engineered wood products, and dispose of according to workplace environmental protection practices and/or procedures 2.6 Complete final adjustments to CNC program, cutting tools and equipment
3. Operate CNC machine	3.1 Use CNC machine, cutting tools and equipment according to purpose, workplace health and safety procedures and environmental protection practices and/or procedures, manufacturer instructions and operational capacity 3.2 Feed engineered wood product or timber into 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 timber or engineered wood products with defects according to workplace environmental protection practices and/or procedures 3.4 Identify routine processing problems and resolve or report to appropriate personnel
4. Complete operator maintenance	4.1 Lock out CNC machine according to workplace health and safety procedures 4.2 Check cutting tools for bluntness or damage 4.3 Remove and replace cutting tools according to manufacturer recommendations

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.4 Dispose of used cutting tools according to workplace environmental protection practices and/or procedures 4.5 Keep machining area clear of dust and debris according to workplace health and 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
Reading	Interpret routine workplace documents related to CNC machining operations
Oral communication	Ask open and closed probing questions and actively listen to clarify contents of work orders and production documentation
Numeracy	- Identify quantities of required timber or wood products within work plans, and count numbers to be machined - Set numerical data on CNC program according to machining specifications - Calculate feed rate to optimise quality and quantity of production output - Measure finished dimensions against specifications and appropriate tolerances

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT3332 Machine timber or engineered wood products using CNC	FWPCOT3235 Machine material using CNC machining and	Updated unit title Minor changes to Application and	Equivalent

machining and processing centres	processing centres	Knowledge Evidence Revised Foundation Skills, Performance Evidence and Assessment Conditions	
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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 FWPCOT3332 Machine timber or engineered wood products using CNC machining and processing centres

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that, for one production run, the individual has machined engineered wood product or timber using one type of computer numerical control (CNC) machining and processing centre selected from:

- CNC three-axis machining centre
- CNC multi-tasking machining centre
- CNC flat-bed router and mortiser.

In performing this task, the individual has machined one type of engineered wood product or timber selected from:

- glued laminated timber (glulam)
- cross-laminated timber (CLT)
- laminated veneer
- chipboard
- medium density fibreboard
- dressed timber
- preservative treated timber.

Also, in performing this task, the individual has:

- followed workplace health and safety and environmental protection practices and/or procedures
- set computer program, conducted a trial run and made necessary adjustments to ensure that quality and dimensions of finished work conform to work specifications
- run CNC machining and processing centre according to workplace operating procedures
- achieved finished dimensions within prescribed tolerances

- conducted operator maintenance on the CNC machining and processing centre.

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, including:
 - health and safety, with particular emphasis on equipment lock-out 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 requirements and practices for timber manufacturing facilities, including:
 - 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 centre to achieve accurate dimensions and quality of finished work
- system functions and capabilities of CNC software for machining and processing centre
- purpose, features and operation of CNC machining and processing centre and equipment used to machine engineered wood products or timber, including:
 - 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 condition of cutting tools.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a timber processing plant, a timber product manufacturing plant or an environment that accurately represents workplace conditions

- resources, equipment and materials:
 - CNC machining and processing centre
 - CNC program suitable for the machining operation
 - dust extraction equipment
 - cutting tools and equipment suitable for CNC machining operation
 - maintenance tools suitable for CNC machining operation
 - PPE suitable for machining timber or engineered wood products using CNC machining and processing centres
 - engineered wood product or timber suitable for machining operations using CNC machining and processing centre
- specifications:
 - work order with specific instructions for machining timber or engineered wood products using CNC machining and processing centre
 - workplace operating procedure for CNC machining and processing centre
 - workplace policies and procedures for machining timber or engineered wood products using CNC machining and processing centre, including health and safety and emergency procedures and environmental protection policies and/or procedures.

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

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>