



Australian Government

FWPSAW3257 Operate timber drying kiln

Release: 1

FWPSAW3257 Operate timber drying kiln

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 dry softwood or hardwood timber in conventional kilns, including batch and continuous drying kilns, or solar assisted kilns, to appropriate moisture contents and stress levels.

The unit applies to individuals who work in timber drying operations in a wood products work environment.

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

Sawmilling and Processing (SAW)

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 drying timber operations	1.1 Determine job requirements from work order or specifications and, where required, seek clarification from appropriate personnel 1.2 Confirm workplace health and safety requirements for task, including use of personal protective equipment, emergency procedures and kiln operation

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Confirm legislation, standards and codes of practice relevant to kiln operations 1.4 Identify and assess hazards and take actions to mitigate risks related to kiln operations 1.5 Obtain timber racks to be dried and assess racks visually for consistent drying characteristics 1.6 Conduct pre-start checks on drying kiln according to manufacturer instructions
2. Load, operate and control kiln conditions	2.1 Load kiln with timber racks selected for drying 2.2 Position baffles and/or blankets as required or according to manufacturer instructions and workplace procedures to optimise air flows in kiln 2.3 Apply drying and final conditioning schedules by adjusting kiln control settings to optimise kiln drying rate, turnaround time and timber quality 2.4 Report kiln charge data to appropriate personnel or enter it into kiln management system 2.5 Follow emergency shutdown procedures in the case of alarm being triggered
3. Monitor kiln conditions	3.1 Check characteristics of kiln charge or use kiln output data periodically to determine the end point of drying 3.2 Adjust kiln control settings in response to kiln charge characteristics to ensure drying schedules are met 3.3 Identify human and equipment faults that may affect timber drying, and take corrective action or report to relevant personnel
4. Check timber quality on completion of drying	4.1 Check characteristics of kiln charge against end product specifications according to workplace procedures 4.2 Assess need for reconditioning or high humidity treatment
5. Complete kiln operations and move or store timber	5.1 Observe cooling down period before baffles and/or blankets are removed from timber according to workplace procedure, if required 5.2 Identify sub-standard timber and direct for re-use according to workplace procedures 5.3 Direct dried timber to storage or processing operations and check that packs are labelled according to workplace 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>
	5.4 Clean work area according to workplace procedures 5.5 Complete records and forward 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 timber drying schedule - Use a psychrometric chart to convert temperature and humidity readings to dry/wet bulb temperatures and equilibrium moisture content
Writing	Complete routine workplace documents related to timber drying operations
Oral communication	Use appropriate vocabulary to communicate with supervisors and team members engaged in timber drying operations
Numeracy	Perform routine calculations related to quantity, temperature, relative humidity, oven dry moisture content and drying times

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPSAW3257 Operate timber drying kiln	FWPCOT3248 Dry timber in solar assisted kilns	Redesigned unit that includes content from FWPCOT3248 Dry timber in solar assisted kilns, FWPSAW3205 Dry hardwood, FWPSAW3206 Dry softwood and FWPWPP3212 Dry material	Not equivalent

FWPSAW3257 Operate timber drying kiln	FWPSAW3205 Dry hardwood	Redesigned unit that includes content from FWPCOT3248 Dry timber in solar assisted kilns, FWPSAW3205 Dry hardwood, FWPSAW3206 Dry softwood and FWPWPP3212 Dry material	Not equivalent
FWPSAW3257 Operate timber drying kiln	FWPSAW3206 Dry softwood	Redesigned unit that includes content from FWPCOT3248 Dry timber in solar assisted kilns, FWPSAW3205 Dry hardwood, FWPSAW3206 Dry softwood and FWPWPP3212 Dry material	Not equivalent
FWPSAW3257 Operate timber drying kiln	FWPWPP3212 Dry material	Redesigned unit that includes content from FWPCOT3248 Dry timber in solar assisted kilns, FWPSAW3205 Dry hardwood, FWPSAW3206 Dry softwood and FWPWPP3212 Dry material	Not equivalent

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 FWPSAW3257 Operate timber drying kiln

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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 the individual has conducted one softwood or hardwood timber drying operation using one of the following timber drying kilns:

- batch drying kiln
- continuous drying kiln
- solar assisted kiln.

In performing this task, the individual has:

- followed workplace procedures to safely and efficiently dry timber
- complied with legislation, standards and codes of practice relevant to kiln operations
- dried timber to appropriate moisture contents and stress levels
- operated and monitored a kiln, and made necessary adjustments in the course of the drying process
- measured the amount of moisture content of timber or timber products during and after kiln drying
- kept degrade to a minimum when drying timber
- managed the safe movement of timber throughout all stages of the drying process
- produced accurate reports and records of the drying process.

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:

- workplace health and safety procedures relevant to timber drying operations, including personal protective equipment, emergency procedures and kiln operation
- legislation, standards and codes of practice relevant to kiln operations

- hazards and associated risks with timber drying, and risk control strategies as identified through risk assessments, manufacturer technical information, regulations and industry health and safety guides
- components, equipment, controls, energy systems and sources and operating principles of timber drying kilns from workplace environment
- methods for pre-start inspection and maintenance of timber drying kiln components
- methods for assessing consistent drying characteristics of racks, including:
 - size
 - age
 - condition
 - species
- reasons for drying timber
- timber drying stages
- wood-water relationships in the drying process
- timber moisture content, including fibre saturation point and equilibrium moisture content
- methods for monitoring and measuring characteristics of kiln charge during and after kiln drying, including:
 - moisture content
 - drying degrade
 - moisture gradient and stress
- influence of temperature, relative humidity and rate of air circulation on the drying rate
- kiln drying schedules for optimal drying rate, turnaround time and target moisture content without causing timber degrade
- timber drying defects, including surface checks, internal checks, end splits, collapse, excessive distortion, bow, spring, twist, cup and case hardening, reasons and control measures
- workplace procedures for drying timber, including:
 - quality assurance processes
 - storage systems and labelling
 - communication and reporting on drying process outcomes.

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:
 - timber drying kiln
 - timber for drying

- personal protective equipment required for timber drying operations
- specifications:
 - templates for reporting on timber drying outcomes
 - timber drying schedule
 - workplace procedures for timber drying
 - workplace health and safety procedures applicable to timber drying.

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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