



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT3249A Select timber preservation techniques

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to select timber preservation techniques taking into account the principles of environmental suitability and sustainability

General workplace legislative and regulatory requirements apply to this unit. Subject to enterprise requirements specific licences/certification may be required in the following areas: forest sustainability certification, chain of custody certification, TUMA and the NSW Timber Marketing Act, Environmental Protection Authority certification

Application of the Unit

Application of the unit

The unit involves selecting timber preservation techniques in a variety of settings including

- saw mill
- wood chip mill
- veneer mill
- board/plywood mill
- timber treatment plants
- downstream processing of timber
- timber and wood products production

The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Employability skills This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine preservation requirements for timber	1.1. Applicable <i>Occupational Health and Safety (OHS), environmental, legislative and organisational requirements</i> relevant to selecting timber preservation techniques are identified and followed 1.2. <i>Environmental legislative requirements</i> relevant to timber preservation are ascertained and followed 1.3. <i>Service requirements</i> for timber are established and followed 1.4. Required <i>chemical retention rates</i> are identified and suitable solution strengths calculated 1.5. Required <i>penetration patterns</i> are recognised
2. Decide on appropriate preservation technique/s for timber	2.1. <i>Preservation techniques</i> are investigated to determine available options that would be consistent with job requirements and the principles of environmental suitability and sustainability 2.2. Options are reviewed and compared for suitability and value 2.3. Appropriate preservation technique/s are selected for use 2.4. <i>Water management procedures</i> are identified and followed 2.5. <i>Contingency management plans</i> are developed 2.6. <i>Quality assurance procedures</i> are implemented and communicated to operators 2.7. <i>Environmental monitoring requirements</i> are determined and established

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit

Required skills

- Technical skills sufficient to identify a range of suitable chemicals and assess their

REQUIRED SKILLS AND KNOWLEDGE

environmental impact

- Communication skills sufficient to establish and communicate contingency plans for operations
- Literacy skills sufficient to research literature and compare techniques
- Numeracy skills sufficient to calculate chemical solution strengths, timber and fluid volumes; measure chemical salt retention rates
- Problem solving skills sufficient to evaluate a range of timber preservation techniques and select the most appropriate technique for the end application

Required knowledge

- Applicable Commonwealth, State or Territory legislation, regulations, standards and codes of practice and established safe practices relevant to the full range of processes for selecting timber preservation techniques
- Environmental protection requirements, including the safe disposal of waste material (including preservative treated timber), environmental monitoring required for preservation equipment, the safe use and storage of chemicals and minimising carbon emissions
- Organisational and site standards, requirements, policies and procedures for preserving timber and selecting timber preservation techniques
- Environmental risks and hazards
- Minimising environmental impact
- Using energy effectively and efficiently
- Using material effectively and efficiently
- Wood technology
- Range of timber preservation chemicals
- Range of timber preservation techniques
- Appropriate timber preservation Australian Standards and market requirements, particularly Australian Standard (AS) 1604.1-2010 Specification for preservative treatment - Sawn and round timber and in Queensland, the Queensland Timber Utilisation and Marketing Act
- Appropriate timber hazard levels in service
- Range of timber preservation plants and their operating techniques
- Established communication channels and protocols
- Problem identification and resolution strategies, and common fault finding techniques
- Types of tools and equipment, and procedures for their safe use and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating chemical solution strengths and retention rates
- Procedures for recording and reporting workplace information

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently select timber preservation techniques suitable for timber requirements

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to, and satisfy, all of the requirements of the elements of this unit and include demonstration of:

- following applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice relevant to selecting timber preservation techniques
- following organisational policies and procedures relevant to selecting timber preservation techniques
- following environmental requirements for operating preservation equipment
- determining preservation requirements for timber
- selecting appropriate preservation techniques for timber
- identifying relevant water management procedures
- developing a contingency management plan
- implementing quality assurance procedures
- establishing environmental monitoring requirements
- Competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to follow relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to

Context of and specific resources for assessment

EVIDENCE GUIDE

Method of assessment

- undertaking work applicable to this unit
 - specifications and work instructions
- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of required knowledge
- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of key competencies
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work

RANGE STATEMENT

situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS requirements:

are to be in line with applicable Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures, and may include:

- personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- safe forest practices including required actions relating to forest fire
- handling and storage of appropriate dangerous goods and hazardous substances
- manual handling including shifting, lifting and carrying

Environmental requirements may include:

- legislation
- organisational policies and procedures
- workplace practices

Legislative requirements:

are to be in line with applicable Commonwealth, State or Territory legislation, regulations, certification requirements and codes of practice and may include:

- award and enterprise agreements
- industrial relations
- Australian Standards
- confidentiality and privacy
- OHS
- the environment
- equal opportunity
- anti-discrimination
- relevant industry codes of practice
- duty of care

Organisational requirements may include:

- legal
- organisational and site guidelines
- policies and procedures relating to own role

RANGE STATEMENT

	- and responsibility - quality assurance - procedural manuals - quality and continuous improvement processes and standards - OHS, emergency and evacuation procedures - ethical standards - recording and reporting requirements - equipment use, maintenance and storage requirements - environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
Environmental legislative requirements may include:	- Environmental Protection Authority requirements - water monitoring requirements - plant design requirements
Service requirements must include	- treated timber hazard ratings - marine borer hazard ratings - timber durability ratings
Chemical retention rate/s	is the amount of preservative retained in a piece of timber after treatment and fixation have taken place expressed as either weight for volume or weight for weight
Penetration pattern/s	is the distribution of preservative within the cross section of a treated piece of timber
Preservation techniques:	- are the range of pressure and non-pressure techniques used to preserve timber and must include: - full cell (Bethel) process - empty cell process - rueping process - double treatment - boultonising - discussion of research into emerging techniques
Water management procedures may include:	- ground water monitoring - bund storages - contaminated water containment

RANGE STATEMENT

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|---|---|
| | <ul style="list-style-type: none">• contaminated water reuse• drip pads |
| Contingency management plans may include: | <ul style="list-style-type: none">• chemical handling and spill procedures• groundwater leakage procedures• fire suppression procedures• emergency evacuation procedures |
| Quality assurance procedures may include: | <ul style="list-style-type: none">• quality assurance manual• process documentation• training documentation• emergency documentation |
| Environmental monitoring requirements may include: | <ul style="list-style-type: none">• groundwater monitoring• chemical disposal• residue disposal• dust• noise |

Unit Sector(s)

Not Applicable

Competency field

Competency field	Common Technical
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